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ABSTRACT

This report of the Mid-Year Seminar of the Pacific Telecommunications Council (PTC) conference contains papers focusing on the use of telecommunications in the travel and tourism industries. After the message of welcome, opening remarks, and comments on the seminar, papers are divided and listed in five categories. First is The Indonesian Case: "National and Regional Development in the Pacific: Analyzing the Past to Chart the Future," "Tourism Development in Indonesia," "Developing Destination Infrastructures: National and Regional Industry Perspectives," and "Telecommunication and Information Technology: Vital Ingredients for Competitive Advantage in Global Travel Industry." The second category is Infrastructure Requirements: "Tourism's Basic Telecommunication Requirements," "Aspects of Telecommunications Hubbing," "High Technology and Tourism: Canada's Approach," "Reservation and Information Systems in Japan's Travel Industry," "ISDN Applications for the Tourism Industry," and "Interface between Telecommunications and Travel from a Broadcasting Perspective." The third category, Information Services, contains "An Overview of Information Technology for Travel Agencies," "Teletel: An Opportunity for Tourism and Travel Area," "Transaction Terminals and Credit Authorizations," "Taiwan's Tourism Videotext Service," and "Meeting Tourism's Information Requirements for Destination and Transport." The fourth category, Strategic Developments, contains "The Role of Telecommunications and Tourism in the National Development Process: Promises and Pitfalls," "The Role of Tourism in the National Economy in Korea," "The Triple T (Port) for Developing Economies," "Telecommunications Regulatory Policy in the ASEAN Countries," and "21st Century Travel Partnerships: Network-based Strategies." The final category, Sustainable Growth, contains "Tourism and Sustainable Development: Environmental and Socio-Cultural Issues," "Telecommunications for Sustainable Growth," and "Telecommunications and Travel: Some Future Prospects." A list of seminar participants is included. (DB)

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Pacific Telecommunications Council

Telecommunications and the Travel Industry: Impacts on National and Regional Development

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TELECOMMUNICATIONS AND THE TRAVEL INDUSTRY:

IMPACTS ON NATIONAL AND REGIONAL DEVELOPMENT

EDITED BY

L.S. HARMS

Papers from the
PTC Mid-Year Seminar
Bali, Indonesia
May 1991

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PREFACE

What started two years ago as a question from Sukarno Abdulrachman, director general, Posts and Telecommunications of Indonesia, has resulted in a remarkable event held May 12-14, 1991 in Bali. The substance of that event, a seminar on telecommunications and travel, is represented in this volume, edited by L.S. Harms, Professor of Communicatons, University of Hawaii at Manoa.

Mr. Abdulrachman's question came during an East-West Center alumni workshop held in Bali, September 11-13, 1989. The topic focused on long-term planning for renewable and non-renewable resources in the ASEAN region. A small group had persuaded the workshop organizers that information was a renewable resource and should be included in the discussions. Based, in part on that, we were able to have the participation of the Director General of Telecommunications in the meeting.

The question he put to me following the meeting was, "Why doesn't PTC organize a meeting in Indonesia?"

Being still smitten by the lure of Bali, I quickly put together a draft proposal to do just that. In subsequent meetings, including a panel at PTC'90, and through correspondence we developed the "dual theme" linking telecommunications and information technology to travel industry and tourism. National development was embraced as a primary focus for these discussions.

As one of his last official acts before taking up the post as Indonesia's Ambassador to Turkey, Mr. Abdulrachman played a key role in the discussions reported on herein.

The two-day conference was attended by more than 200 persons from both the information and the travel industry. We hope that the discussions in Bali plus these papers will lead to additional interaction among persons concerned with the future of these two intertwined facets of our developing world.

Richard J. Barber
Executive Director

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TELECOMMUNICATIONS AND THE TRAVEL INDUSTRY

TELECOMMUNICATIONS AND THE TRAVEL INDUSTRY

"With the growing interest in the linkages between telecommunications and the travel industry, including tourism, PTC'90 is organizing a special panel discussion to explore various aspects of the topic." This was the opening sentence of a letter drafted by PTC Executive Director, Richard Barber, inviting me to chair a PTC panel on Telecommunications and the Travel Industry.

The first speaker on that PTC'90 panel was S. Abdulrachman, then Director of Posts and Telecommunications of Indonesia. Toward the close of the panel discussion, he proposed that, given the importance of the subject, it should be discussed more fully at a PTC mid-year seminar. As both Minister Soederman and PTC President Koseki note in their welcoming remarks, the PTC Board implemented the proposal of Mr. Abdulrachman by scheduling a mid-year meeting in Bali.

In his message of welcome in Bali, Minister Soederman emphasized that for Indonesia, as for many other countries, tourism supports national development in four ways: as a major earner of foreign currency; in development of the outlying regions; by creation of job opportunities; and, through conservation of local traditions. He further stressed that telecommunication technologies play a key role in "enhancing the social and economic development of the region," including tourism. Minister Soederman concluded by predicting that tourism in Asia/Pacific will increase at a faster rate than the world average during the 1990's.

Chairman of the PTC Board, Robert Engelbardt, in his opening remarks, thanked the Indonesian hosts and the several co-sponsors for making it possible to hold the PTC mid-year seminar in Bali. He stated that, "For tourism to prosper, the basic transport and modern telecommunications infrastructures must be in place and capable of expanding to meet growth." He cautioned that "undesirable repercussions" can result from uncontrolled tourism growth and noted that the Persian Gulf war had demonstrated the "fragility" of the travel industry.

The diversity of viewpoints held by PTC members was cited by PTC President, Yasuo Koseki, as a major strength of PTC. He noted, however, that the telecom user and user groups are under-represented in PTC, so he welcomed the opportunity to meet with representatives of a major telecom user, the travel industry. For the future, he anticipates that the new telecom and information services will enhance the "tourist destination for both operators and traveler." He concludes with the observation

that telecommunication and travel industries share needs for human resources and capital, and that these topics would be discussed further in a future PTC seminar. The full texts of the remarks by Minister Soederman, PTC Chairman of the Board Engelbardt and PTC President Koseki follow.

L.S. Harms

MESSAGE OF WELCOME

Soesilo Soederman
Minister of Tourism, Posts and Telecommunications, Indonesia

Distinguished guests, ladies and gentlemen, it is indeed a pleasure for me to be here with you at the opening session of the Mid-Year 1991 meeting of the Pacific Telecommunications Council (PTC), being held in Denpasar, Bali, from 12 to 14 May. The presence of participants who are distinguished personalities and experts in their respective fields, I believe, will facilitate intensive and in depth discussions and exchange of views, which is one of the objectives of PTC for its conferences and meetings.

I welcome warmly the decision of the PTC Board, taken at a 1990 meeting, to select Bali as the venue for this Mid-Year 1991 meeting. As you may be aware, the year 1991 has been proclaimed as the Visit Indonesia Year, by the government of Indonesia, meaning that, during this year, Indonesia is stepping up its promotional activities in the tourism field by offering a host of attractions for foreign visitors. Famous for its natural scenery and wealth in traditional culture, during 1991, various programs, festivals and events have been arranged in almost every corner of the country, emphasizing the uniqueness of each region.

As is the case for many other countries in the Pacific Region, for Indonesia, tourism is considered a major sector in support of national development. Indeed, tourism has a four-fold strategic value to our nation: firstly, tourism shall be a major foreign currency earner in Indonesia's efforts to boost non-oil exports; secondly, the tourism sector is extremely effective in economic development of the regions in Indonesia, where tourism activities take place, not in the least through its multiplier effect; thirdly, the tourism sector is able to create job opportunities for both men and women who would otherwise not be able to earn a decent living; and last, but not least, through the competitive and stimulating nature of tourism, it will have a positive effect on the conservation of local traditions and folklore, including songs and dances, and improve the quality of these expressions of our cultural heritage. In short, tourism is a great vehicle to boost creativeness as well as bolster pride and love for one's country.

Characterized by great diversity in the areas of economics, society and culture, the Pacific is a region the like of which cannot be found anywhere else in the world. Owing to the fact that the region consists of industrialized countries, newly industrialized economies and a number of developing countries, the Pacific represents the ideal model for promoting broad dialogue on telecommunications-related issues. Given also the fact the region embraces the vast Pacific Ocean, there is no doubt that modern electronic and telecommunication technologies

are key features that can play a particularly significant role in enhancing the social and economic development of the region.

In the field of telecommunications, the Pacific Region is unquestionably the area where the most dynamic developments have been occurring in the past decade.

Telecommunication has become the engine of economic growth, just as transportation, tourism, energy and the conservation of the environment shall be essential prerequisites for further development of this part of the world. I call this the 3 T's and 2 E's of development: Telecommunications, Transportation, Tourism, Energy and the Environment.

As I mentioned before, the Pacific region today is no doubt the fastest growing region in the world. Not only has the region become a new growth centre but economic interdependence among the member countries in the region has also significantly increased, reflecting great potential and dynamism within the region itself.

Five hundred years ago, the world trade-centre moved from the Mediterranean to the Atlantic. Currently, it has just moved from the Atlantic to the Pacific. The scope of the Pacific area is expanding almost as rapidly as that of the European area. The population is almost half of the population of the world. And toward the year 2000, it will reach two-thirds of the world total population, whereas Europe has only six percent of the world's population.

Although the Pacific region has almost half of the world's population, the telephone penetration is only six percent. In many urban areas this unfavourable situation hampers the development of all other sectors. However, we can take note that many countries in the region have been successful or at least are in the process of tackling this situation in earnest. Most countries in the region are embarking on major development programs. About five million digital switching lines were installed during the years 1984-1988, according to one of the surveys made for the region. It is expected that, by the year 1992, the region's installed base of digital systems would be around 15 million lines.

Submarine cable networks and satellite communications in the Pacific have also been expanding to cope with the increasing communication demand. Digital optical submarine cable networks, coupled with digital satellite technology are serving the growing needs of modern communications in the Pacific region.

It is difficult, if not to say impossible, to talk about development without communication networks. Communications integrate and modernize a nation. As one of the developing countries in the region, Indonesia has proclaimed

telecommunications as the strategic agent of development, and many efforts are carried out especially to serve the particular needs for tourism development and other export oriented industrial and agricultural ventures.

For Indonesia, telecommunications has another priceless value. The archipelago concept of Indonesia lays down several basic principles of a united society covering a unified national economic system, socio-cultural system, political system and security and defense system. Telecommunications, through our domestic satellite system PALAPA, in operation since 1976, has indeed supplied a decisive share towards the strengthening of this archipelago concept. Thus, as a positive consequence of the availability of dependable telecommunications in the country, it has enhanced the stability of our nation.

A report on world trade predicted that tourism in the Asian region will increase at a faster rate than the world average during the 1990's. Also for Indonesia, tourism is forecast to become one of the largest and fastest growing industries. To this end, over the past years, the Indonesian government and the private sector have implemented an intensive programme, building the infrastructures and facilities necessary to accommodate the growing number of tourists that will visit us each year. Launching the "Visit Indonesia Year 1991" programme is an integral part of the strategy to actively promote Indonesia as a world tourist destination. The target of one million foreign visitors arrival was set for 1987 and was, in fact, surpassed at the end of 1987.

By the end of 1990, two million foreign tourist arrivals were recorded, and it is estimated that sixty percent of these tourists will visit Bali. The unfortunate occurrence of the war situation in the Middle East has had its impact on the early days of 1991, but I am hopeful and optimistic, that our 1991 visitor target can be reached. We have all experienced that a disruption of stability in any part of the world could have a disturbing effect to the Pacific region, so that it makes it essential to do our utmost in maintaining and improving the stability within the Pacific region itself. I consider this Mid-Year PTC meeting, convened here in Bali, in spirit and in substance, a manifestation of our common obligation to that end.

OPENING REMARKS

Robert Engelbardt
Chairman of the PTC Board

On behalf of the Board of Trustees of the Pacific Telecommunications Council, I extend to you a warm welcome to the PTC Mid-Year Seminar. Also, I want to thank the Indonesian Department of Tourism, Posts and Telecommunications for sponsoring this event along with PT Indosat, France Telecom, Bell Atlantic, AT&T, DMT, Siemens, PERUMTEL, PT Astra-Graphia and Garuda Airlines.

For those of you who may not be familiar with the Pacific Telecommunications Council, we are a non-profit regional organization comprised of providers and users of telecommunications services along with policy makers, planners, academicians and government agencies.

We hold an annual one week conference-and-workshop each year in Honolulu and mid-year seminars in various locations within the region. The Council's Board of Trustees also meets to conduct the Council's business affairs at these times.

We are very pleased to have this Mid-Year Seminar and Board Meeting in Bali, particularly at the time of "Visit Indonesia Year". Bali is not only a truly beautiful and charming visitor destination, but its unique culture and religion are found nowhere else in the world.

Add this to the warmth and friendliness of the Indonesian people, and you have a combination which is difficult to surpass. And I say this even though I'm from Hawaii which, as you know, is also a popular tourist destination.

In many Asian-Pacific countries and Pacific Island Nations, tourism is a major contributor to the economy, and in some places, it is the primary source of income. For tourism to prosper, the basic transportation and modern telecommunications infrastructures must be in place and capable of expanding to meet the demands of growth.

At the same time, we must be aware of the social impact that tourism can have on the culture of the indigenous people. There are many examples of undesirable repercussions brought about by uncontrolled development. This can eventually eliminate the allure which originally made the destination popular. Too many once pristine places with relaxed and harmonious lifestyles have been turned into mercenary environments, infiltrated with crime and corruption.

Fortunately, this is not the case for Indonesia, but there are several places around the world which have lost their thriving visitor industry because of these problems.

The extreme fragility of the travel industry was exemplified by the Persian Gulf war. Almost every tourist destination throughout the world was affected with serious reductions in visitor arrivals. Amazingly, legitimate reasons for travel curtailment were quite unjustified in most cases, but a generally negative psychological mood seemed to prevail during the crisis and for some time afterwards.

Fortunately, the rapid end of the hostilities has resulted in a gradual resumption of overseas travel. But if the situation had been prolonged, the effect on the economies of many places which rely on tourism as an economic mainstay could have been devastating.

Some of these concerns will be addressed over the next two days. We have an excellent slate of speakers representing providers and users of telecommunications services for the tourism and travel business, along with government officials and academic institutions involved with this important industry.

THE MID-YEAR SEMINAR IN BALI

Yasuo Koseki
President of the PTC

On behalf of the Pacific Telecommunications Council, PTC, I wish to express my sincere appreciation to the Indonesian Government and P.T. Indosat to hold this Mid-Year Seminar in this paradise island of Bali, on the occasion of The Visit Indonesia Year. We are looking forward to having fruitful discussions of an important topic -- Telecommunications and Tourism.

Within the Pacific Telecommunications Council are many viewpoints of the telecommunications marketplace. Indeed, it is one of PTC's strengths to have a wide range of telecommunications perpectives on information technology developments and applications.

In looking at the PTC membership roster, one can see that the carrier, the supplier and the regulator are reasonably well represented. Also present and active is a good cross-section of individual expert members and academic institutions.

One category of membership which is in short number is that of the customers or, as they are often called, the users.

During this Mid-Year Seminar, we hope to have a very useful dialog between telecommunications representatives and those representing one of the world's largest users of communications, the travel industry.

For this opportunity we have to thank the Minister of Tourism, Posts and Telecommunications, the Honorable S. Soedarman and Mr. Jonathan Parapak, Secretary General of Tourism, Posts and Telecommunications, who greets on behalf of the Minister. A word of appreciation should also go to Mr. Sukarno Abdulrachman, Director General of Posts and Telecommunications, who first suggested that these two perspectives be combined in this Mid-Year Seminar especially on occasion of The Visit Indonesia Year.

It is our expectation that through this seminar and through other activities, PTC will help foster dialog with the telecommunications user.

Rapid change is one of the common elements of both telecommunications and tourism. Using Bali as an example, we see current and recent construction of many first class hotels plus a world class convention facility. Linked with this is an expanding air terminal as well as a growing army of ground transport vehicles.

The changes in information technology are also quite dynamic. Fiber optics, mobile communications, digital systems and new computer systems are being brought into service all over the world. When these two industry sectors combine, dramatic changes are possible.

One striking example of the telecommunications enhancement of travel is that of the INMARSAT organization which has started to provide satellite communications services between the aircraft and the ground. It enables the aircraft flying over the ocean area to do so more safely and efficiently. And in the near future, passengers on the airplanes over the ocean can telephone to their offices and homes. Other examples of the applications of telecommunications in tourism are the huge global reservation systems which airline companies and travel agencies have developed and are expanding.

The enhancement of the tourist destination for both the operator and the traveller can be seen in having news via international TV news distribution systems via satellite, Home Country direct international calling, and point of sale credit verification, for example.

Travel and telecommunication endeavors share other characteristics. Salient among them are the need for human resources and the need for finance capital.

These are topics which will be touched upon during this seminar. PTC has scheduled its next seminar in Tahiti, September 3-6, and another in Gifu City in Japan in late October 1991. We invite you to join us there. I wish to repeat our appreciation to the Indonesia Government and P.T. Indosat to host and assist this Mid Year Seminar in Bali. I hope all of the participants enjoy the seminar as well as the nice natural scenes and culture in Bali.

THE INDONESIAN CASE

THE INDONESIAN CASE

The fact that tourism and telecommunication are in a single ministry, one participant at the Bali seminar suggested, may have prompted the strong proposal at PTC'90 by Abdulrachman to devote a mid-year meeting to telecommunications and the travel industry. In the papers that follow, officials from the Indonesian Ministry of Tourism, Posts and Telecommunication along with PERUMTEL and PT INDOSAT set forth the role of telecommunication and travel in national and regional development. The telecommunication infrastructure necessary for competitive advantage, particularly at remote tourist destinations, receives special attention.

The first paper, by Abdulrachman, examines the past to better prepare for the future. He sketches the "Pacific Area" geography and provides a brief review of Indonesia's economic and social development since 1969, noting the pervasive role of the oil industry in that development. He states that the future path for Indonesia requires increasing exports of industrial goods and services and a major strengthening of human resources, both skilled workers and middle management. He predicts that inter-country communication in the Pacific will increase in importance and enhance sub-regional and regional cooperation.

In the second of the four papers in this section, Ave begins with a world view of the growth of tourism, noting that the Asian region now accounts for about 15 percent of world tourism. The 1993 target for tourism in Indonesia is some three million international arrivals with a 12-day average stay, generating around US$ three billion. Policies are in place to achieve these targets and are set out in the paper. The traveler in the future is expected to demand modern telecom services including facsimile and video conferencing. And, Ave finds a deep "spiritual" harmony between telecommunications and the travel industry.

Sudarijanto, in the third paper, states that telecommunication issues in Indonesia span a wide range including geographical, investment capacity and human resource management. His paper provides a detailed and sweeping view of the telecom infrastructure in Indonesia, including plans for future development of more than five million new telephone lines by 1998. The final sections of the paper deal with the specific infrastructure requirements for visitor destinations which include a variety of telephone and data services. Closer cooperation between the travel industry and the telecom operator are recommended to prepare for growth.

In the final paper in this section Soerjodibroto asserts that telecommunication and information technology are necessary to survive the "tight competition" in the travel industry in the Asia Pacific countries. While tourism in Indonesia has just "increased three times in five years," future growth is expected

to require a continuing effort, in that neighboring countries are vigorously developing their travel industries as well. His paper catalogs the services now in place and being planned to keep Indonesian tourism competitive, for instance, mobile video conferencing for businessmen at remote resort areas. The interdependence of telecommunications and tourism, he concludes, is as follows: improved telecommunications will increase tourist flow; increased tourist flow will encourage better telecommunications.

Taken together, the four papers that follow, all by high level Indonesian officials, present with clarity and in detail the "Indonesian Case."

L.S. Harms

NATIONAL AND REGIONAL DEVELOPMENT IN THE PACIFIC: ANALYZING THE PAST TO CHART THE FUTURE

S. Abdulrachman
Post and Telecommunications, Indonesia

1. INTRODUCTION

The Asia-Pacific region is one of the most interesting regions in the world. Looking at the past, the economics of the region suffered, among other reasons, as a consequence of World War II. Internal conditions (including political conditions) in a number of these countries were also not conducive for a smooth recovery from these damages. Moreover, the lack of economic and social development during the colonial times had left its mark on the general quality of life in these countries, for instance, illiteracy and public health.

For many of the countries in the Asia-Pacific region and the Pacific Rim countries, colonization is now past history. In fact, the prosperity in the area has much improved, so that in the 1970's, predictions could be made as to the bright future lying ahead, especially for the Pacific region, notwithstanding the observation that the situation in a number of individual countries or subregions still did not have the necessary stability needed for accelerated economic development.

This region contains several countries which rank high on the list of countries with the largest populations in the world. Indonesia, with 186 million population, ranks fifth in that list. In a report by SRI International, taking only 13 countries of the Pacific Rim, basically the countries at the western border of the Rim, we can find that these countries alone constitute 30% of the world population (1.7 billion inhabitants) with an annual growth of population of 1.4%, and with varying economic backgrounds and development strategies.

In the following presentation, an attempt will be made to assess the Indonesian case: its past and current condition and position; and to describe a probable scenario for the next ten years or so, dealing in some detail with telecommunications aspects as well.

2. THE PACIFIC AREA IN THE 1980's

For this presentation, what is meant by the geographic area of "the Pacific area" is a little different than the 'official' definition. Use will be made of the definition of "the Pacific Rim Countries" to indicate what is meant by "the Pacific area" or "the Pacific".

If we take all countries bordering the Pacific Ocean, then definitely the western parts of the American Continent should be included, and at the other boundary of the Pacific Ocean, I include the People's Republic of China; in many statistical presentations, the People's Republic of China is categorized as included in "Asia" or "Asia-Pacific".

For the purpose of this paper, the Pacific area includes the People's Republic of China as well as Canada, the United States and South America.

The Pacific area thus defined consists of countries with high GDP's, such as the newly industrialized countries and New Zealand, with Malaysia, Thailand at the lower scale of this group, and finally, countries with less than US$800 GDP per capita, such as the Philippines, Indonesia, the PRC, countries of the South Pacific, etc.

This area, especially the western rim, has shown an exceptionally fast growth rate in the 1980's, with certain individual countries reaching more than 10% annual economic growth rates. Trade statistics also show significant growth figures, both inter-regional, as well as between the area and the rest of the world. Besides the impact of industrial development in many of the Pacific countries on their economies, tourism has been a strong sector in the development too. Furthermore, the fast development of the area can be in part also attributed to the availability of supporting economic infrastructures, including telecommunications.

Indonesia, even though with modest results, has definitely participated in such development, endeavouring to be as active and as competitive as possible in many fields.

The economic developments in the Pacific were complemented by developments in non-economic sectors. Through the more intensive travel within the region, the availability of modern communication and information streams, it is possible to enhance also the mutual understanding between nations and people of the various countries in the region, despite differences in history and cultural and ethnic backgrounds. This being a social process, it is, of course, very difficult to measure results in a quantitative way.

Intuitively, I would say that these kinds of relationships will be more and more important in the future, because of the increasing interdependency between countries in the world, and therefore, also between countries in the Pacific. The same way that economic ties are developing, we will see non-economic activities between countries of the Pacific growing in parallel.

3. INDONESIA'S ECONOMIC AND SOCIAL DEVELOPMENT SINCE 1969

It was in 1969, now almost 25 years ago, that Indonesia firmly decided to change its economic structure from an agricultural into a balanced economy, where agriculture and industry are balanced and with the industrial sector being used also to support agriculture. This is certainly not an easy task, while in the early stages of our first 25 years long-term development plan (1969-1994), there was no self sufficiency in food and basic economic infrastructures were practically non-existent.

However, given the temporary oil-boom in the 1970's, and notwithstanding the ensuing world oil-crisis in the early 1980's, results are now becoming visible. In fact, the oil crisis itself was an important reason to quit the too dominant role of oil revenues both in foreign currency earnings as well as in the domestic state budgets as government revenue.

The efforts in boosting Indonesia's foreign currency revenues from non-oil exports resulted in the middle of 1987, for the first time in the development of the economy; non oil-export earnings became bigger than the oil export revenues.

In 1982, Indonesia's non-oil exports were US$3.9 billion; in 1985, US$6.5 billion; while in the year 1990, we achieved US$14.6 billion in non-oil export revenues, or more than 60% of the total exports.

Even more interesting is that, in 1990, about 82% of that non-oil export revenue was generated by the industrial sector, leaving the agricultural sector far behind. These results also mean that simultaneously domestic value added activities take place as well as job creation in the industry and related sectors.

These positive results were possible by relatively drastic changes in government policy: deregulation in several economic sectors, changes in foreign and domestic investment and trade rules, and more intensive promotion and marketing efforts. In short, creating the right atmosphere and conditions.

In the same period (the 1980's), the Pacific region as a whole experienced a high economic growth, with the Asia-Pacific region leading. In recent years, Indonesia' exports have become relatively more oriented to the countries of the Pacific, meaning that a shift occurred from the historical and traditional orientation to Europe. In the year 1989, 93.1% of our total exports went to the Pacific region, while in 1990, this figure was about 84% (including a reasonable amount to the United States), and only about 12.4% was absorbed by Western Europe.

On the other hand, imports to Indonesia have risen also. Not only because of the increased average per capita income, but also

to fulfill the requirements in capital goods, machineries and others as needed by the industrial sector.

In the papers that follow, more will be told about the Indonesian tourism industry and its growth. It may suffice for the moment only to indicate, that foreign currency earnings in this sector have also increased year by year with substantial growth rates. It should be realized, that such growth rates are not easily achieved, because of several unique characteristics of tourism, that relate to human behaviour and attitudes, both of the visitors as well as of the host, and dependency on many factors, such as regional and national stability of the recipient countries and economic infrastructures.

The role of telecommunications in aforementioned achievements is twofold: as a distinct economic sector in support of the growth in the gross domestic product of the country, and the (Pacific) region as a whole; and as the means for all sectors in the social and economic life of Indonesia, subregions of the Pacific and the Pacific as a whole, to conduct their activities smoothly, expeditiously and efficiently.

Because of the very substantial pressures from the economic sectors in Indonesia, as well as from the general public, our domestic telecommunications facilities and services today are still over-utilized, not always available in time and at the most ideal locations, in spite of the increasing amounts of investment funds being applied.

4. POSSIBLE FUTURE DEVELOPMENTS

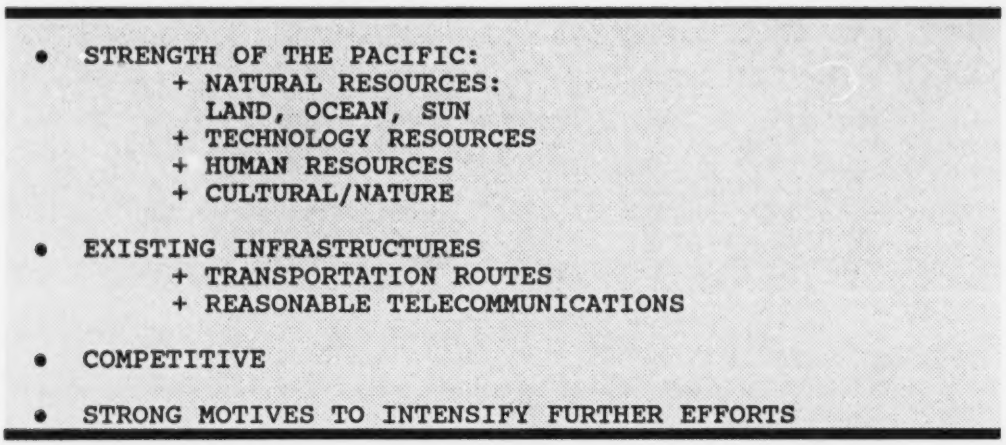
The overall world situation and how it develops will have an important impact on the Pacific as well: developments in Europe, including the implementation of the single market of the European Community (the EC) in 1992, and the unification of Germany, along with the changes in the economic policies of Eastern Europe. In the Middle East, all would hope for peace in that region. How long it will take from today to establish that, leading to intensified economic development, is difficult to predict, but some optimistic voices are heard.

These developments could take away some of the attention of investors or would-be investors and investments for the Pacific region. Consequently, this could in the longer run change trade flows to and from those geographical areas. This last effect could either be a positive one or a negative effect on countries of our Pacific region.

On the other hand, the Pacific region shows also developments which could very positively enhance the results so far achieved in the Pacific Region. Stability in the Pacific region is today very good, and the on-going efforts to come to peaceful

solutions, such as in Indochina, could even more guarantee that stability.

FIGURE 1: CHARTING THE FUTURE



The Pacific region has strong technology resources, natural resources, especially renewable resources both land-based as well as from the seas, upcoming industrialized countries (both NIC's as well as countries such as Indonesia), abundant gifted human resources, cultural and historical wealth and natural beauty. These resources can definitely be further developed and maintained for the prosperity of the Pacific region.

The Pacific region already possesses several transportation and telecommunications arteries with numerous feeders, and domestic routes are developed or being improved in various ways.

As long as this strength can be maintained or enhanced, expanded so as to result in the optimum efficient configurations, we can look forward to an exciting future for the region, whereby the more stronger countries continue to extend their helping hands to the weaker countries amongst us, respecting their sovereignty and autonomy to choose their associations, and give these weaker countries the opportunity to boost their resilience. I am also sure, that countries outside the Pacific region can benefit from our progress, on the basis of mutual benefit.

These factors are all good reasons to intensify the development in the Pacific area.

5. THE INDONESIAN CASE

For Indonesia, the path to follow seems to be clearly identified. To be able to have a sustainable growth in the future, the current strategy was prescribed in the first long-term development period ending in 1994 has to be continued.

FIGURE 2: STRATEGIC ISSUES

- INDONESIA:
  - + CONTINUE CURRENT STRATEGY FOR INDUSTRIALIZATION
  - + SUSTAINABLE GROWTH
  - + INFRASTRUCTURE DEVELOPMENT
  - + HUMAN RESOURCES
  - + CULTURAL/NATURE COMPARATIVE ADVANTAGE
  - + TOURISM
  - + EASTERN GATEWAY(S) FOR TELECOMMUNICATIONS

That is: to further develop the industrial sector with accentuation on exporting goods and services. The competitiveness of Indonesia as the site for foreign investments has to be maintained and improved through various measures.

The temporary bottlenecks in the provision of electric power for big scale factories (expected to be solved in 1993), and telecommunications facilities for serving industrial sites should be priority issues to be tackled.

Bigger volumes of skilled workers and middle management (technical and administrative) to cater for the needs of industrial ventures have to be made available, or have to be trained/educated as a part of the investment projects. As an example of the efforts being carried out with respect to the human resources, is the setting up currently of an undergraduate and graduate school by Perumtel (the company in charge of domestic public telecommunications services) to increase the number of available telecommunications and electronic engineers, in addition to the outputs from various existing universities producing engineers in these fields. More people have to be trained at polytechnic as well as at high school level technical- and vocational training schools and on-the-job, to be able to maintain the infrastructures and networks.

The future opportunities can only be made use of if you have the trained and skilled manpower, or if you can quickly acquire such personnel. Private entrepreneurship has to be encouraged.

The interconnectivity of the Indonesian domestic infrastructures with the regional highways and networks in the Pacific region, telecommunications for example, should be intensified. This could be done among others by developing eastern gateways or eastern traffic-centres in Indonesia, catering among others for the Southwest Pacific, Australia and New Zealand. Through this facility, the east part of Indonesia could strengthen its ties with other parts of the Pacific region, and in general improve accessibility to the eastern parts of Indonesia, where maritime and land-based resources are abundantly available, but as yet not sufficiently developed.

FIGURE 3: STRATEGY FOR THE REGION TELECOMMUNICATIONS

- THE REGION
  - + INTERCONNECTIVITY OF INTERNATIONAL NETWORKS & SERVICES
  - + EFFICIENT DOMESTIC SYSTEMS
  - + EFFICIENT SATELLITE AND SUBMARINE CABLE SYSTEMS
  - + TECHNOLOGY FOR SMALLER TRAFFIC-STREAMS
- COOPERATIVE EFFORTS
  - + PLANNING
  - + EXCHANGE OF EXPERIENCES ITU, APT, PTC, APEC (future)
  - + VENTURES

It is essential that inter-country communications in the Pacific, so far carried out by means of the Intelsat system and numerous submarine cables, can continue to depend on flexible solutions that are cost-effective and, for the sake of the developing countries, could be acquired with minimum capital investments. Technological innovations should not only benefit or cater to the nations having relatively big streams of traffic.

Innovations should also be directed towards feasible and attractive applications for smaller countries in the Pacific region, or countries with relatively smaller streams of traffic. Subregional satellite systems may constitute an interesting solution, combined with jointly owned submarine cable systems. The proliferation of submarine cable systems should be avoided as much as possible, to get the most out of the investments by all parties concerned.

Networking through the available infrastructures should be encouraged, but at the same time, attention should be paid to the problem of providing balanced earnings for the local service providers or other local parties, involved in handling and/or facilitating such networking, especially in cross-border situations.

It seems to me, that regional endeavors in planning or more open exchange of views in matters such as mentioned above, could be beneficial to many countries in this region. For this purpose, several mechanisms are available today, such as the United Nations system (the International Telecommunication Union), the regional organizations and meetings (the Asia-Pacific Telecommunity, the Pacific Telecommunications Council, etc); and maybe in the future, the APEC (the Asia-Pacific Economic Cooperation) for those countries involved.

6. CONCLUSIONS

The future of the Pacific region looks bright. Further efforts to continue the development of the region, through individual countries' efforts as well as through subregional or regional cooperation and other relevant actions, seem to be justified.

The unique combination of countries within the region (very advanced to developing) could be utilized optimally for such development. Indonesia will continue to participate in the economic growth as well as in trade and industry in the region, by maintaining its competitive edge in relevant areas of activity.

Telecommunications infrastructures and networks play an important role in the development of the Pacific region.

TOURISM DEVELOPMENT IN INDONESIA

Joop Ave
Directorate of Tourism, Indonesia

1. INTRODUCTION

In the last two decades, tourism has become a worldwide phenomenon which cannot be ignored or underestimated. Tourism is one of the fastest growing sectors and has considerable economic importance in the world.

According to World Tourism Organisation (WTO) statistics, 1989 world tourist arrivals amounted to 405.3 million, an increase of 3.3 percent over the previous year. Tourism receipts were US$208.7 billion, indicating an increase of 7.4 percent.

The Asian region accounted for 14.6 percent of the world's international tourists. During the 1980's, the share of the Asian region in world tourism jumped from 11.4 percent to 17.1 percent.

The growing importance and socio-economic implications of tourism are being widely recognized, in terms of generating foreign exchange, creation of business and employment opportunities.

The multiplier effect of tourism, its interdependent and interrelated character, encourages gigantic industrial linkages.

The industry is long established, and essentially involves the flow of not only people location to location, but also human value system, cultural and economic networks.

Tourism is not just a brief passing phenomenon of post industrial society, an ephemeral activity which will subside as quickly as it arose and expanded.

The progress achieved in transportation technology, the accessibility of information due to progress made in telecommunication and electronic technology, the increased income of people in the developing country as well as the availability of more leisure time, urge people to travel.

Tourism represents a basic and not a sophisticated requirement in the life of a person: a better quality of life.

2. THE DEVELOPMENT OF TOURISM IN INDONESIA

In entering its Fifth Five Year Development Plan, the government of Indonesia has given tourism a higher priority.

The 1988 State Guidelines stipulated the following objectives:

- create business and employment opportunities;
- generate foreign exchange;
- promote the development of the provinces;
- foster national integration and love for the country; and
- preserve and enhance the culture and environment.

The target set for 1993, which is the end of the Fifth Five Year Development Plan follows:

• International arrivals	2.5 - 3.5 million
• Average length of stay	12 days
• Foreign exchange receipts	US$2.5 - 3.1 billion

In achieving the set targets, the Government has stipulated a set of policies as follows: intensification of promotion, increasing the accessibility to and within Indonesia, the development of tourist resorts, the development of manpower, improvement of the quality of the tourism product, promote tourism awareness among the people and the development of marine tourism, MICE industry (Meetings, Incentive travel, Conventions and Exhibition) and special interest tourism, which implementation results in a dramatic growth of international arrivals.

The 1988 international arrivals amount to 1.3 million, an increase of 22.6 percent over the previous year. In 1989, it amounts to 1.6 million, an increase of 25.1 percent. In 1990, the international arrivals amount to 2.17 million and the international tourist receipt was US$2.1 billion.

Investments in tourist facilities have increased not only in numbers but have spread into other provinces beyond Bali and Jawa.

Being a vast archipelago, tourist destinations in Indonesia are becoming diffused. In addition to the Nusa Dua tourist resort in Bali, eight new tourist resorts are now being intensively prepared. Respectively, in Lombok, the island next to Bali; in Irian; North Sulawesi; South, West and North Sumatra; Riau; Lampung and Central Jawa.

The Government has placed an increasing importance on tourist resort development complementary to the policies on incentive system for foreign and domestic investment, telecommunication technology as supporting infrastructure.

The whole tourism development linkages is likewise becoming a comprehensive network with rapidly expanding new world order of information system.

3. TOURISM AND TELECOMMUNICATION

Progress in telecommunication technology has brought us into the era of information. In the future, telecommunication will become a common part of a person's life. Cable TV, facsimile, automobile phone, video-conference, paging system, personal computers serve to illustrate this.

Travellers in the near future, being better educated, will be more demanding. The need for better services, convenience and safety in travel is high priority, leisure travel combined with business travel will be common practice.

All these entail the demand for the availability of instant information.

With the introduction of new mega carriers and easing of restrictive world access policies, the speed of travel is matching the speed of telecommunication. In order to match this speed, sophisticated technology such as world-wide reservation systems, automatic ticketing systems, on line banking and fibre optic technology become essential to penetrate spatial limitation.

Telecommunication is already interfaced with all aspects of life. There is hardly one facet of life which is untouched by telecommunication. It even has managed to penetrate the most private place in life, which is usually untouchable to the public domain. The impact of telecommunication is actually into the minds of people. In this respect, telecommunication has become an efficient and effective tool for marketing.

In the near future, the travel industry requires an improved telecommunication system. Telecommunication and its derivative services are imperative, in particular to those pertaining to business travelers as well as conference organisers.

The diversity of this country, the geographical spread and location of the tourist resort, necessitates the development of systems, pricing and operations in the field of telecommunications.

4. CLOSING REMARKS

Tourism is one of the main industrial linkages for development worldwide, brought about by the art of communication.

Telecommunication technology has already interfaced with all aspects of life.

The speed of availability and accessibility of communication technology has removed the obstacles of time and distance.

The harmony of this unique inter-relation between the telecommunication technology and the travel industry depends on the spiritual balancing of the people's mind.

DEVELOPING DESTINATION INFRASTRUCTURES: NATIONAL AND REGIONAL INDUSTRY PERSPECTIVES

C. Sudarijanto
PERUMTEL, Indonesia

1. RATIONALE

It is no longer necessary to argue about the role of infrastructure as an important factor in stimulating industrial growth. There is no longer doubt of the importance of investment in roads, transportation, power energy, telecommunication and so on in the general efforts to create reliable infrastructures as pre-conditions for the "take-off".

Infrastructure may stimulate industry, but at the same time in practice, industry will demand a particular quantity and type of infrastructure. Infrastructural investments will, therefore, probably be a consequence rather than a cause of industrial expansion. This is a condition that requires special attention from the decision-makers as to how the infrastructure can provide adequate means for driving better growth of industry. One of the main issues in infrastructural investment is the telecommunication investment. The big gap between supply and demand of telephone lines ranks at the top of the list of telecommunication issues in Indonesia. With a telephone density of 0.64 in 1990 (1.2 million lines for 186 million population, approximately), the question to meet that demand is imminent.

The derivative questions such as transmission development, outside plant expansion, network improvement, and so on, have brought-about more complicated situations which turned out to involve every single aspect of management. The following parts try to envisage the efforts made in developing telecommunication infrastructure amidst the endless steps in advancing the national travel industry, and the impacts to the regional travel development in general.

2. CHALLENGES IN THE TELECOMMUNICATION DEVELOPMENT

The nature and magnitude of telecommunication issues in this country, just to mention a few, stretch from geographical view, investment capacity, sources of financing up to human resource management.

2.1 Geographical View

Being the backbone of any transformation activity, telecommunication constitutes a vulnerable link in the national development chain. Connecting thousands of islands, big and small, requires major resources from within the country as well as abroad. Not to mention specific problems encountered in

developing each island, the establishment of an overall network system alone has required a particular strategic thinking of the management.

The question as to "how many" and "how good" are the telecommunication facilities represent clearly the demand which should be met right away. The quantity and the quality of telecommunication services, are no longer just expectation but rather pressing needs instead. It is in line with this demand that the telecommunication infrastructure is claimed to be one of the most important items in the materialization of the concept of a nationally unified archipelago. Besides, equitable distribution of development and its results shall be taken into consideration in formulating policies and overall planning since this guideline had been decided as a national government program. In particular, a special forward-looking shall be addressed to the eastern part of this country which is relatively lagging behind in development as compared to the other parts in the west and in the middle of the country.

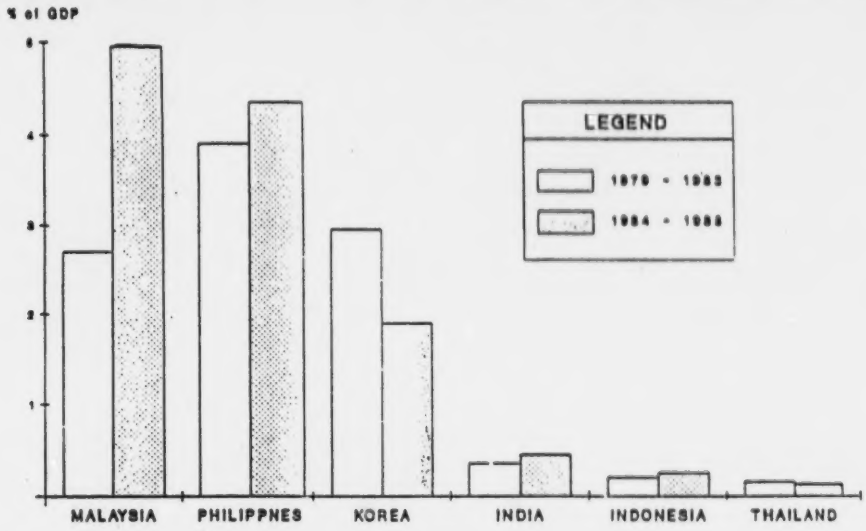
Meanwhile, Indonesia's topographical configuration has urged the nation's strategic planners to foresee the demand in the urban, suburban, rural as well as remote areas. Furthermore, strategic telecommunication development planning shall also address specific requirements in industrial areas, business areas and tourism areas/resorts in addition to residential demand.

2.2 Investment Capacity

Speaking of the investment capacity, we normally refer to the number of telephone lines constructed within a year. Past performance revealed that the construction achievement could not meet the existing demand resulting in the growing number of "back-log" (customers waiting list) which reached over 1.0 million lines in 1990. This gap will become bigger and bigger unless acceleration and expansion programs are initiated as early as possible.

The predominant issue in this context is fund raising. Telecommunication investment cost, in 1990, equals US$2,060 per line unit and tends to decrease gradually each year as a result of the use of latest high technology and more economical mass production, thus enabling a reduction to a figure of US$1,500 in 1998. It means that it needs around US$4.3 billion to build 2.1 million lines in the PELITA-V (1989-1993) and US$7.5 billion for 5.0 million lines in the REPELITA-VI (1994-1998).

FIGURE 1: AVERAGE TELECOMMUNICATIONS INVESTMENT



Source: International Telecommunications Union

This situation has created an encouraging opportunity for the private sector to take part in the telecommunication development since the government fund does not cover the whole financial scheme.

Telecommunication development requires support from various telecommunication manufacturers. The question as to how far the national telecommunication industry can provide adequate support in terms of sufficient quantity and controlled quantity, is another thing to discuss. While particular components are manufactured locally, such as cable, antenna, and digital switching, some other components are still imported.

These circumstances will, by all means, require specific consideration of the management as to how to synchronize all those activities. And yet, there is still one thing to take into account, namely the time required to follow all the procedural mechanism.

Another decisive factor in pursuing success in the telecommunication development is human resource management. This is an issue which is prevalent all the time. No matter how advanced an organization is, the management will always come across with the human resource management issue.

To this specific item, the management shall lay down special policy and well planned strategy so as to establish a system recognized by all levels of management as a part of their working life.

3. TELECOMMUNICATION INFRASTRUCTURE

3.1 Current Condition

A brief illustration on the current condition might be worthwhile in order to get familiar with telecommunication infrastructure in this country.

In the switching area, the company has set out a plan to replace gradually the analogue system (which constitutes 61.6% of the total system) by the digital system. The plan will be completely accomplished in 1999.

As for transmission, two main systems are in operation. One is the terrestrial transmission system comprising microwave, troposcatter, high frequency, spur route, open wire line, coaxial cable and optical fibre. The backbone of the terrestrial transmission system is terrestrial radio microwave systems which stretch out from North Sumatera (Trans Sumatera Microwave System) to Java (Trans Java-Bali Microwave System), West Nusa Tenggara goes through to Ujung Pandang (Eastern Microwave System).

The total number of stations in this system is 118 with 5,050 km coverage. The radio frequencies used are in 4 to 8 GHZ band and the capacity of channels is 2 x 1,260 each link, except for Eastern Microwave System, which has 2 x 960 channels.

The other system is the satellite transmission which was started in 1976, when the first satellite generation (PALAPA A series) was launched. The application of the satellite system had successfully overcome a part of the greatest problem in the transmission development.

PERUMTEL is holding three "slots" of the Geosynchronous Orbit for communication satellite. One is the foregoing PALAPA B-1 at 118° E whose operational lifetime will be terminated in 1993, and later be de-orbited at an appropriate time. The other two are still in operation, i.e., PALAPA B2R at 108° E and PALAPA B2P at 113° E with a capacity of 24 transponders, respectively. The two satellites are complementary to each other, a spacecraft failure will be backed-up by another satellite. The role of satellite communication system has become very important in the dissemination of information service such as telephony, telex, TV and radio program, etc., especially in the eastern part of Indonesia, where geographical condition and difficult terrains constitute obstacles to use other means of transmission system.

In addition to the national use, the PALAPA transponders are also leased to the neighboring countries: Thailand, Malaysia, Philippines, Australia (TOPAZ), New Zealand and Vietnam. Whereas services provided by the company, comprise telegraphy, telephony, telex, facsimile, data communication, and leased circuit.

However, rising demands and diversified customer groups require enhancement of services which have led to the introduction of new services such as VSAT, Electronic Information System, Paging, Long Distance Education System, and National Mobile Telephone System.

3.2 Future Development

A target of 2.1 million telephone lines to be constructed in the PELITA V (1989-1993) constitutes an enormous task for the company.

And, moreover, around 5.0 million telephone lines more have to be completed in the PELITA VI (1994-1998), which will make a total number of 7.5 million telephone lines by the end of 1998. In line with the above plans, a huge number of transmission channels, both trunk and local transmission systems, have to be established.

Those are the reasons that have brought PERUMTEL to execute a series of transmission system expansion plans including Remote Area Telecommunication Network.

To design the recent telecommunication transmission system, two basic elements should be considered seriously. One is digitalization of the system.

This is essential in order to establish total digital networks, to realize technical and economical rationalization, and also to prepare for future ISDN by the year 2000.

The second consideration is the reliability of the network. To achieve high reliability of the network, PERUMTEL has decided to duplicate trunk transmission route with optical fibre digital transmission system or digital microwave bearers.

In this regard, a part of the new optical fibre digital transmission system has been installed between Jakarta and Surabaya, and also digital microwave bearers are to be installed along the existing Java-Bali Microwave route. The trend in economic growth, both in the country and in the Asia region, has encouraged the increase of transponder lease by national organization and other communication satellite in the near future. And furthermore, the national telecommunication network will be strengthened by plans for laying-down the submarine cable

communication between Surabaya (Java) and Banjarmasin (Kalimantan) and the launching of PALAPA B-4 Satellite in 1992.

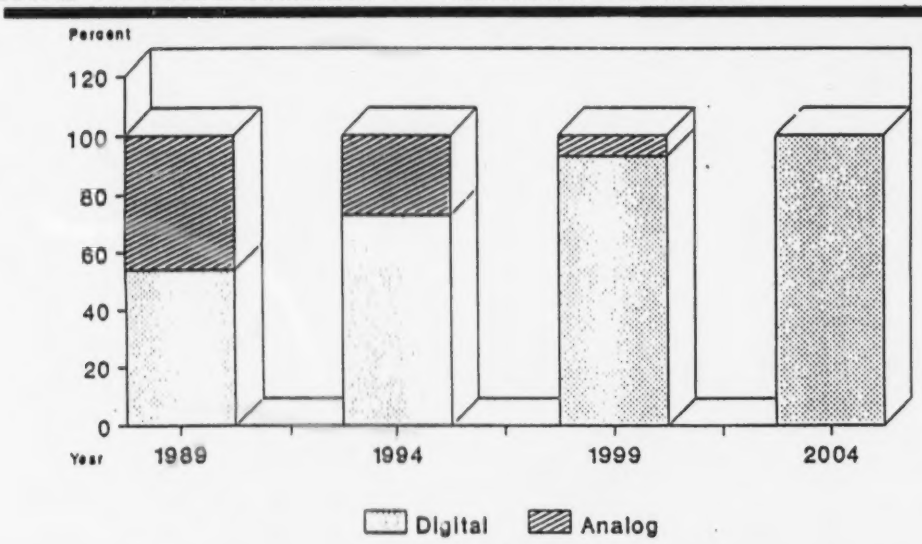
3.3 Potential Problems

3.3.1 Financing

The simplest way in financing the telecommunication investment is, of course, through a self generating fund. However, the volume and the magnitude of investment is enormous, thus self-financing is presently not yet sufficient.

PERUMTEL, in this current year, is capable to allocate 25-26% of the total investment expense through self-financing. But, in the coming years, the number of telephone lines to be built will multiply up to 3 to 4 times relative to PELITA V and 7 to 8 times in the PELITA VI. To cover this deficiency, PERUMTEL has been raising funds through syndication loans from the national banks, also, soft-loan and mixed credit from foreign countries. But these steps will only solve a part of the financing problem.

FIGURE 2: DIGITALIZATION OF TELEPHONE EXCHANGES



Another important question is how to complete all the construction programs within the time schedule. This is the reason that PERUMTEL management has decided to invite private sector participation through a project scheme which is known as Revenue Sharing arrangement. This scheme has been underway with the national private companies since 1990, and will probably be enlarged to international companies upon mutual benefit.

In addition to the national use, the PALAPA transponders are also leased to the neighboring countries: Thailand, Malaysia, Philippines, Australia (TOPAZ), New Zealand and Vietnam. Whereas services provided by the company, comprise telegraphy, telephony, telex, facsimile, data communication, and leased circuit.

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3.3.2 Management

The above ambitious plans can only be achieved through hard work and improvement in the overall aspects of management. The company should be fundamentally restructured in order to make it flexible and adaptive. To this aim, the management has already set up the company's basic guidelines (internally known as "3-2-1 Policies"):

3 Targets:
a) Best services to customers/users
b) Best results for the stake-holders (Government as Shareholder, customers and employees)
c) Best corporate image

2 Strategies:
a) Systematic approach
b) Human resource development approach

1 Foundation: Spirit of Teamwork

However, particular attention should be given to organizational structure and human resource development:

- Organization

  A change in the structure of organization is required to make the company "trim" and "agile", thus adaptive to changes and environment. The running of business which is focused at the headquarters control should be drastically changed to give more authority and freedom in decision making to regional and operational units. The management has been applying "The 4-D Policies" (Delegation, De-bureaucratization, Deregulation and Decentralization) in order to enhance the company management as a whole. To realize this plan, a number of strategic business units (SBU) will soon be created where complete management functions will be applied.

- Human Resource Development

  One of the effective tools to improve employees performance quality is through Training and Education programs.

  The management is quite aware of this issue, therefore a lot of training and education programs have been initiated and expanded all the time within the country as well as abroad. Companies' in-house training comprises, among others, Supervisor Training, Operational Management Training, Middle Management Training, in addition to regular promotional training programs.

  Top management training is conducted outside through joint cooperation with the National Administration Institute,

National Defence and Security College or other Universities, MBA programs and Telecommunication Technology College.

Dispatch of employees to foreign countries as trainees or students in Universities (USA, France, etc.) represents one of the human resource development efforts to promote employee quality which complement the programs carried-out in the country.

4. TELECOMMUNICATION AND TRAVEL INDUSTRY

4.1 Telecommunication

Being a government controlled telecommunication corporation, PERUMTEL carries a mission with two unseparated sides: one is providing services to the public and the other is making profit.

Standing in the middle of wide range of societies and industry environment, the company has to behave in such a way so as to suit to the best mutual benefit of itself and the environment in an interdependent system, one thing which is quite common everywhere.

The interrelationship between the company and external institutions shall always be nurtured and developed, such as with training and education institutions, governmental body (national and local), supplier, construction company, manufacturer, consultant, financial institution, travel association, and others. And above all, the company shall be obliged to law and regulations, in whatever nature and areas of services, in exercising its programs and activities.

Specific remarks must be addressed to the supporting telecommunication industry circle in view of its supporting role in the telecommunication development success. Equipment manufacturers (cable, switching, terminal, transmission, software, and others) have a specific position in driving the development success, or otherwise.

It is undisputable fact to see that to some extent, the capacity and capability of the national industry today are limited, both in quantity and in catching the latest technology progress. But telecommunication development cannot just wait until the national capacity equalizes or outnumbers the needs for telecommunication components.

This situation certainly leads to a more complicated problem. Therefore, one way or another should be sought as a solution. This is an issue which requires national commitment of all the parties associated with the telecommunication business in the country, no matter if they are from government sectors or private sectors as well. With regard to travel industry, the question

will probably be similar to that of the other business areas: What does the telecommunication company offer to help them run the business effectively and efficiently: And on the other hand, how does the telecommunication company benefit from the travel industry?

4.2 Travel Industry

Using John Naisbitt and Patricia Aberdene's Megatrends 2000 as reference, this country will be one of the many in the Pacific Rim which will grasp opportunities for progress on the condition that proper preparation be accomplished on a timely basis.

It can hardly be denied that tourism growth depends, more or less, on the overall economic growth and, to be more specific, on the standard of living improvement.

The World Bank, in the World Development Report 1990, discloses that Indonesia in the long run growth (1970-1987) had made an economic growth in terms of reduction in poverty at 41% and annual growth of mean income or expenditure at 3.4%. Those figures indicate good prospect for the next decade, assuming that similar trend will occur up to the year 2000.

Thus the tourism industry can be projected to grow at the same pace or even better, which means that telecommunication infrastructure must provide facilities to tourism industry at the same rate at the least. The impact of the tourism growth is naturally an increase of the moving of people which in its turn, lifts up the travel industry business.

How does the telecommunication infrastructure cope with this phenomenon?

5. PROPOSITION FOR FUTURE PERSPECTIVES

All the planned development as mentioned earlier is expected to cope with the needs and demands for telecommunication services including those from the travel industry in general. However, this expectation is, by no means, ignoring the specific requirements of the travel industry.

The management will certainly address the issues for developing tourist destination infrastructure. In addition to various kinds of enhancement services, some other strategic solutions must be made available to deal with particular needs such as the use of Light-traffic-digital exchange (STDIK), Digital Radio Loop System (Ultraphone), and other systems as results of the latest technology progress. So to say, the opportunity to develop destination infrastructure will not be handicapped by the application of new technology. After all, the most important thing is the provision of ever growing services which involves

quantity, quality, accessibility and reliability of services. More specific attention must be given to the provision of services in the tourist destination location.

Visitor's needs for services can be satisfied through the provision of:

- Pay-phone (coin-phone and card-phone)
- Telecommunication services point which provides:
- telephone-call
- telegram
- telex
- facsimile

for local and international connection.

The management of such telecommunication service points can be conducted by the company alone or by joint-cooperation with other organizations including those from the private sector. The latter scheme has been underway for several years (WARTEL, WARPOSTEL, WARPARPOSTEL) and is still opened for further expansion. The system has proven effective to cover the urgent needs in such places and extremely helpful to mitigate the gap in the urban, suburban areas. It is expected that by the fulfillment of the planned targets in PELITA V and PELITA VI, the coverage to the tourist destination places will be no longer a question.

The issues which need thoughtful consideration in this regard are the accurate selection of the system used, the economic consideration, and the smooth coordination of all the parties concerned in planning and execution.

Furthermore, much closer relations and more frequent contacts between the travel industry and the telecommunication operator will be of much help to building better cooperation by exchanging information and views.

Such kinds of contacts, individually as well as collectively, have to be initiated and organized periodically to accommodate newest information and progress from both parties. PERUMTEL's management would be pleased to offer such contacts, either nationwide or region-wide, so that latest requirements from the travel industry can be properly accommodated.

On the other hand, the management would make an appeal to all parties concerned to be aware of the manifold problems in developing telecommunication infrastructure and eventually seek for the best solution to the benefit of all.

TELECOMMUNICATION AND INFORMATION TECHNOLOGY: VITAL INGREDIENTS FOR COMPETITIVE ADVANTAGE IN GLOBAL TRAVEL INDUSTRY

Tjahjono Soerjodibroto
PT INDOSAT

1. INTRODUCTION

Today many developing countries, especially in the Asia Pacific region, are beginning to realize the essential importance of tourism as a strategic and profitable industry. Asia Pacific countries are starting to form a highly competitive tourism industry catalyzing the development of their tourism sectors, in an effort to keep in stride with developed countries where tourism is already viewed as a major commodity in their economy.

According to a survey done in 1989, the total number of tourists in the whole world was 405.3 million people (Table 1). About 50% of tourists chose Europe as their destination, meanwhile only 14.6% chose Asia Pacific. Thus, the development of tourism in Asia Pacific countries faces a great challenge.

1.1 Tourism Development in Indonesia

Indonesia is widely known as "an emerald chain in the equator", mainly due to its beautiful and natural panorama evenly spread out in all of its 27 provinces, each with their own unique customs and cultures. All of which indicate that Indonesia has many hidden potential tourist attractions.

The number of tourists visiting Indonesia has increased three times within five years (Table 1), in 1990 this number reached approximately 2,177,500 people bringing about US$2,105.3 million to the national revenue. In comparison to other countries, during the last five years, Indonesia only received 4.1% of the total number of tourists in Asia Pacific countries with 2.9% of total revenue, and 10% of total number of tourists in ASEAN countries, with 17% of total revenue.

Realizing this, the Indonesian Government is striving to develop the Indonesian tourism industry by announcing a Visit Indonesia Year 1991 program which targets the contribution to the national revenue target from the tourism sector of about US$1,719 million in 1991, US$1,980 million in 1992, and US$2,250 million in 1993.

1.2 Competitiveness in the Global Travel Industry

The tourism industry has a strong correlation to other sectors, such as transportation, accommodation and telecommunication as well. Based on the recent survey done by the Indonesian Bureau

TABLE 1: TOURISM DEVELOPMENT

YEAR	WORLD		INDONESIA		ASIA PACIFIC	
	TOURISTS	REVENUE	TOURISTS	REVENUE	TOURISTS	REVENUE
1985	332,991	109,556	749.35	525.3	26,800	11,500
1986	341,434	129,182	825.035	590.5	29,800	14,400
1987	358,659	158,714	1,060.347	874.3	35,600	19,100
1988	393,160	194,171	1,301.049	1,027.0	44,600	27,900
1989	405,306	209,155	1,625.965	1,284.5	48,900	31,000
1990	416,000	214,000	2,177.56	2,105.3	NA	NA

NOTE: TOURISTS = IN THOUSAND PEOPLE
REVENUE = IN MILLION US$

of Statistics, the reasons tourists visit Indonesia are: 77% visiting for pleasure/vacation; 16% for business/convention; 5% for visiting relatives/friends; and 2% for other purposes. Therefore, the main factors for tourists returning will come from convenience, quality accommodations, reliable transportation, and attractive tourist destinations.

This points out the need for the development of transportation and telecommunication in support of the tourism industry through:

1.2.1 Competitive Tourist Destination

Competition in tourist destinations is achieved through continuous improvement by increasing their attraction to tourists. Tourist destinations can no longer depend only on natural tourist destinations, but they also have to be developed in order to maintain their attractiveness and provide other conveniences to visiting tourists. Along with government leadership, the development will require additional funds and expert advice from foreign and private investors such as with the creation of many Tourist Development Councils (TDC).

1.2.2 Tourist Information and Promotion

Attractive and beautiful tourist destinations would be meaningless without effective tourism promotion. Promotion can be done through brochures, international tourism seminars, advertisement in magazines, as well as through active promotion by travel agents. The current "Visit Indonesia Year 1991" and

participation in the PATA conference is evidence of steps taken to support this.

1.2.3 Availability of Transportation, Accommodation, and Telecommunication

The availability of transportation, accommodation, and telecommunication facilities must exist in order to increase the flow of tourists from overseas. Reliable transportation is required to generate a pleasurable travelling experience for tourists. Hotels with enough room capacity, restaurants and other accommodations have to be continuously developed. Hotel and airline reservation should be available with fast, easy, accurate and dependable services. Availability of adequate telecommunication facilities in all tourist destinations will be convenient to tourists for making telephone calls or using other telecommunication services, especially for the business travellers who want to combine their trips for both business and pleasure.

1.2.4 Support from Other Sectors

Other sectors play quite significant roles as well. Banking and credit card providers should be able to provide flexibility for travellers to travel around without encountering difficulty in obtaining enough money. Warm and fast service from immigration is important to give a positive first image of the country to the tourist.

2. TELECOMMUNICATION AND INFORMATION SYSTEMS IN INDONESIA AND THEIR IMPACT ON TRAVEL INDUSTRY

2.1 Telecommunication System Development in Indonesia

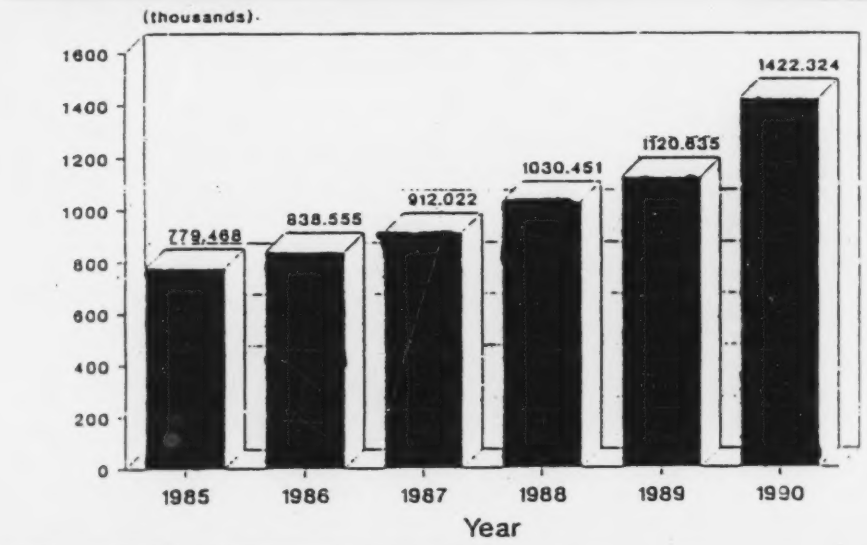
Historically, a landmark in the development of modern international telecommunication systems in Indonesia took place in the middle of 1969, with the start of the operation of the INTELSAT Earth Station in Jatiluhur and the Java-Bali terrestrial microwave network. These events set in motion other future developments.

The Trans-Sumatra terrestrial microwave network was established in 1975. The domestic telecommunication systems in Indonesia entered the age of satellite communications for the first time in 1976 when the Palapa satellite was implemented. Indonesia entered the digital age in the 1980's. Switching and transmission facilities were digitalized. Telephone facilities and local manufacturing digital telephone exchanges were expanded. Nowadays, Indonesia is also accessible through satellite and submarine cable system with the Intelsat Earth Station in Jatiluhur (West Java) and the Submarine Cable Stations in Jakarta and Pantai Cermin (North Sumatra). Telecommunication

traffic in Indonesia have grown rapidly in the last few years as the result of it. See Figures 1 and 2.

Currently, Indonesia is implementing digital telecommunication services, such as Intelsat Business Services (IBS), Packet Switched Service, Electronic Mail, etc. Indonesia also participates actively in the planning and construction of various optical fiber submarine cable, especially in the Pacific and Indian Ocean system. Together with the domestic network (consisting primarily of microwave and Palapa Satellite), the telecommunication facilities in Indonesia have opened isolated tourist destination in Indonesia to the rest of the world. See Figure 3.

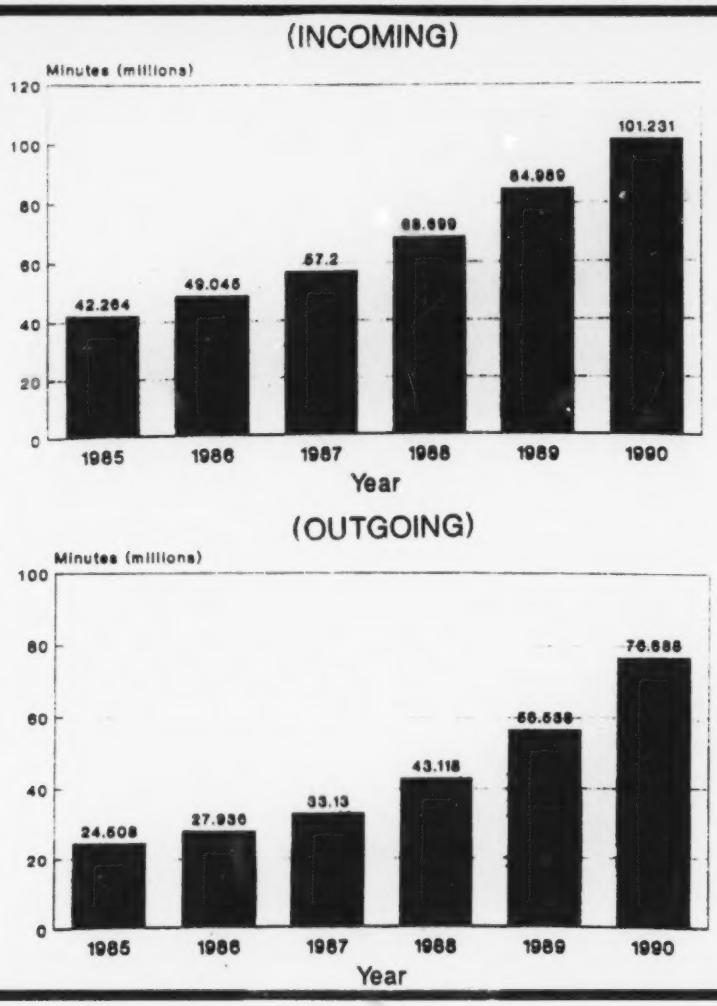
FIGURE 1: TELEPHONE EXCHANGE CAPACITY



2.2 Information System Development in Indonesia

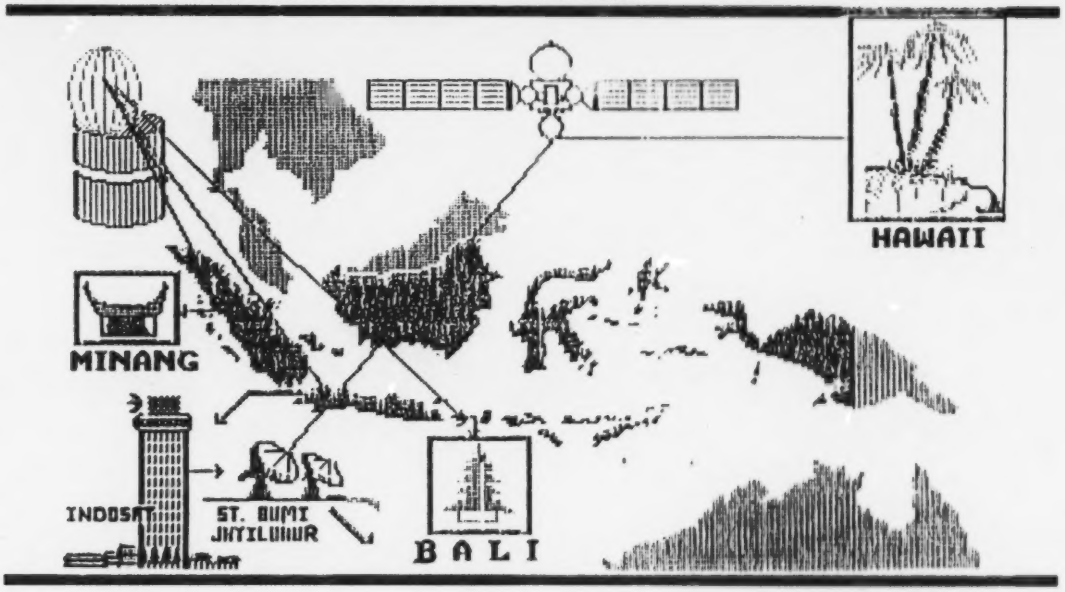
Information Systems were introduced in Indonesia back in the 1930's, with the state railway operator as one of the users; it wasn't until the 1960's that IBM introduced the old IBM 1401 computer system in Indonesia. Since then the number of computer users began to increase exponentially demanding more hardware and application development from information technology of various computer suppliers.

FIGURE 2: INCOMING AND OUTGOING TELECOMMUNICATION TRAFFIC



In the travel industry, Garuda Indonesian Airways was one of the pioneers by introducing its Reservation System ARGA that ran on the IBM S/360 series machine back in 1974. Nowadays, Garuda uses computers in several applications including application for their aircraft maintenance and hotel reservation system. Hotel application became popular just in the last 5 years with most of the four and five star hotels using computers for their front office, food & beverage, and billing applications.

FIGURE 3: TELECOMMUNICATION -- TOURISM



2.3 The Impact of Telecommunication Facilities on Global Travel Industry

As stated previously, the travel industry has a strong correlation to telecommunication. Telecommunications support the tourism industry's efforts to give a feeling of warmth and pleasure during their stay, and a sense of security for travellers in many ways. Telecommunications enables travellers to talk to their families back home and make airline and hotel reservations easy and reliable.

For business travellers, telecommunications allows fast and effective contacts to the home office. Some of the available services that telecommunications offer are:

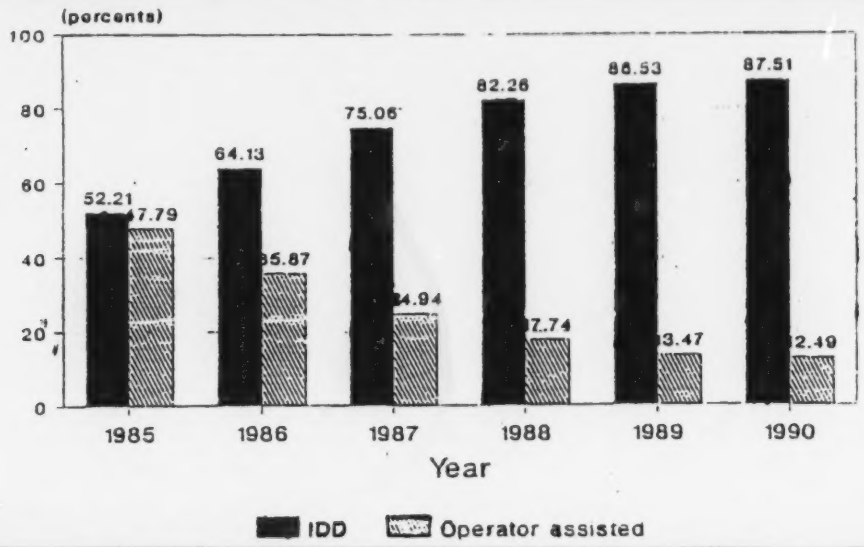
2.3.1 International Direct Dialing (IDD)

This service allows users to make an international call directly, without any operator assistance. With the introduction of IDD services, international calls using IDD service tend to increase, and the operator assisted calls tend to decrease. As of 1990, the IDD service is available in 95 Indonesian cities and towns, and can access 185 countries. See Table 2.

2.3.2 IDD in Hotels

Currently, the IDD service is also being implemented in hotels to provide hotel guests the convenience of IDD service right from

FIGURE 4: IDD DEVELOPMENT



their own hotel room. By the end of 1991, 40 hotels in Java, Sumatra and Bali will have made this facility available to their guests. See Table 2.

2.3.3 Home Country Direct (HCD)

Language often becomes a barrier for a tourist in making operator assisted international calls. This problem is solved by Home Country Direct (HCD) service. With the (HCD) service tourists call their country operators directly from Indonesia and request international calls in their own language.

In Indonesia, this service is currently available for making international calls to 14 countries such as Japan, Australia, Italy, Singapore, South Korea, Netherlands, United States (including Hawaii), New Zealand, Malaysia, Hong Kong, United Kingdom, Spain and Canada. The HCD service can be used from many convenient locations such as airports and hotels. See Table 4.

2.3.4 Telepon Umum Kartu (TUK)

The TUK, or better known as Telepon Umum Kartu (Public Card Phone) is a telephone debit card that can be used in a public telephone to place local, long distance and international calls.

This service is relatively new in Indonesia. Today, there are 1122 TUK units, which are distributed all over cities and towns in Indonesia. See Table 4.

TABLE 2: IDD SERVICE DEVELOPMENT IN INDONESIA

DESCRIPTION	1985	1986	1987	1988	1989	1990
DESTINATION COUNTRY	90	106	127	138	145	185
IDD CITY	10	10	13	25	50	95
IDD HOTELS	5	16	15	21	29	40

2.3.5 IBS

Intelsat Business Service (IBS) is a totally integrated digital private line service via satellite. IBS is ideal for multinational organization, banks, airlines, SITA, etc. in providing a closed user telecommunication network. This service has been in operation since 1990, and it is available for 64 kbps data transmission rate. This service is designed to support foreign investors and multinational companies in communicating with their branch office in Indonesia. For international airlines, this facility provides better access to terminal connected with their reservation system in their home countries.

2.4 The Impact of Information System on Global Travel Industry

Information systems are very important for global travel industry. Information systems improve the accuracy of information flow among hotels, travel agencies, airports, etc. for hotel and airline reservation systems enabling travellers to make reservations conveniently.

With the advancement of information technology and domestic telecommunication facilities, many travel agents now have reservation terminals connected to the Garuda Systems, with multi-access reservation system still to come. Foreign airlines also have installed computer terminals in their branch offices to provide reservation services to their customers and travel agents.

TABLE 3: LOCATION OF HCD SERVICE

CITY	LOCATION
JAKARTA	Sukarno Hatta International Airport Hotel Indonesia President Hotel Hotel Hilton Mid Plaza Skyline Building
BALI	Ngurah Rai International Airport Putri Bali Hotel Bali Beach Hotel
YOGYAKARTA	Adisucipto Airport
SOLO	Adisumarmo Airport

During the 1986 EXPO in Vancouver, Indonesia introduced on a trial basis, the Indonesian Tourism Information Database which provides tourism information such as tourist destinations, calendar of events, hotel accommodation, transportation and others. Today, other applications that support the tourism industry uses modern information technology which includes relational databases, computer networking, and data communication utilities. Such applications available to the public are:

2.4.1 SKDP (Packet Switched Service)

Sambungan Komunikasi Data Paket (SKDP) or Packet Switched service has been in operation since 1984. This data transmission system enables several applications, as follows:

- Data Base Access
- Computer Time Sharing
- Electronic Telemessage
- Corporate Services

This facility is used more by business travelers who need to contact their headquarter computer's systems.

2.4.2 Banking Network and ATM Sharing

Information system plays an important role in banking. Without a banking network, transaction between banks can not rapidly and accurately be done. In Indonesia, banking network and ATM sharing has been introduced since 1987. This system connects several banks in Indonesia.

TABLE 4: TUK CITIES AND TOWNS IN INDONESIA

CITY/TOWN	UNITS	CITY/TOWN	UNITS	CITY/TOWN	UNITS
Banda Aceh	8	Wonosobo	1	Jambi	6
Medan	29	Purwokerto	3	Bengkulu	7
Lhokseumawe	5	Surabaya	25	Palembang	8
Pematang Siantar	3	Malang	11	Bandar Lampung	8
Prapat	1	Denpasar	29	Bandung	35
Padang	11	Mataram	7	Banjarbaru	1
Pekanbaru	7	Kupang	6	Samarinda	6
Sekupang	5	Dilli	6	Balikpapan	8
Bukit Tinggi	3	Singaraja	2	Manado	6
Payakumbuh	1	Sumbawa Besar	1	Palu	3
Cirebon	6	Kendari	2	Padang Panjang	1
Bogor	3	Ujung Pandang	4	Tanjung Pinang	3
Cisarua	1	Pare-pare	1	Dumai	3
Semarang	13	Ambon	8	Pontianak	6
Yogyakarta	13	Ternate	2	Palangkaraya	2
Bantul	1	Jayapura	5	Banjarmasin	7
Sleman	1	Wonosari	1	Wates	1
Tegal	3	Jakarta	776	Solo	4

2.4.3 Credit Card Verification System

With credit card provide flexibility for travelers to make transactions, in avoiding abuse, credit cards must be verified. A credit card verification system can make the verification process faster and more accurate, thus allowing the traveler more time to enjoy their purchase rather than waiting for the purchase.

2.4.4 SIE (Electronic Mail Box)

Sistem Informasi Elektronik (SIE) or Electronic Mail Box service has been in operation since 1990. SIE service allows the customer to send and receive data and letters electronically. Today, SIE service is available in 10 cities in Indonesia and capable of accessing 24 countries.

3. THE FUTURE DEVELOPMENT

Rapid changes currently taking place in worldwide telecommunications industry are affecting all areas of the global economic activity, which have wide ranging implications in almost all countries in the world.

Independent and stand alone domestic regulations that were traditionally applied are now becoming the subject of review in many countries taking into account the wider framework of international developments, requirements and boundaries. This

trend in telecommunication policies may affect the future of telecommunication facilities that play important roles in the global travel industry.

3.1 Global Competition in the Travel Industry

At the turn of the 21st century, it is predicted that tourism would be one of the biggest industries in the world. Many countries are concentrating on travel industry in making it a main economic commodity, thus creating a highly competitive atmosphere in securing the market share. It is based on the recent global developments as follows:

- The real efforts of some countries to make tourism more of a contributing factor in their economy.
- Tourism is no longer felt as luxury need but is now a secondary need.
- The impending economic globalization, combined with sophisticated transportation and telecommunications facilities, will increase the trend of combining business with pleasure.
- Increasing political openness due to the political changes in the Eastern countries will have an impact on the global tourist destination map.

The prospect of Indonesian tourism industry is very promising, regarding its good tourist potential and growing tourist visit. This tendency has been anticipated with some actions as follows:

- Increasing the number of new hotels in several tourist destinations especially in Bali and Jakarta.
- Planning to develop infrastructures in tourist destinations throughout Indonesia, especially in the east part of Indonesia which lacks enough facilities.

3.2 The Future Telecommunication and Information System Development

Telecommunication and information technology are vital ingredients to survive in the global competition. Currently, studies are being made on possible applications of future sophisticated telecommunications and information systems in the tourism industry.

3.2.1 Integrated Reservation System

Effective and well coordinated hotel and airline reservations can be made with the application of an integrated national and global

reservation systems. Hotel reservation, airline reservation, and other types of reservations can be made simultaneously by the travel agents.

3.2.2 Videoconferencing

Videoconferencing, or teleconferencing, enables a businessman to establish meetings with their headquarters or potential business partners overseas as if the meeting is held in the same room. Through the use of a mobile satellite system these meetings can be conducted with more remote places. Videoconferencing can also be used for promoting tourism as well by providing tourist telecommunication links with their families back home.

3.2.3 Remote Area Infrastructure

With its many attractive tourist destinations spread throughout Indonesia, some tourist destinations are in remote areas with minimal telecommunication facilities. Bridging the gap before adequate telecommunication facilities are available, a remote communication system such as Very Small Aperture Terminal (VSAT) or mobile communication systems is very suitable for these areas. A relatively small investment is needed to install those communication systems, while providing the tourist area with the telecommunications facilities required by tourists.

3.2.4 Commercial Aeronautical Telecommunication Service

In 1989, the final preparations for the inauguration of the world's first commercial mobile satellite service for the aeronautical community were being made. Commercial aeronautical service will include low and high speed data and voice communication enabling businessmen on board to conveniently make phone calls or send documents using facsimile.

3.2.5 IBS

In the future, Intelsat Business Service (IBS) with high speed data rate above 64 kbps will be needed to support high quality communication such as videoconferencing, high speed facsimile, etc.

3.2.6 IDD and HCD

In the future, Direct Dialing (IDD) and Home Country Direct (HCD) services would be expanded to connect more countries abroad from more locations that are convenient to the travellers.

3.2.7 Credit Card Call

International calls can now be made using credit cards, which are valid only to countries where a working cooperation exists with

the credit card provider. This service is convenient to tourists, because they do not need local currency for making international calls.

3.2.8 Integrated Database

In the future, integrated databases should be developed to improve the efficiency of travel agents, such as:

- Immigration Information System.
- Tourism Information System.
- Hotel Management Information System.
- and other information databases.

3.2.9 ATM with Credit Card Facility

Credit card with Automated Teller Machine (ATM) facility will be very convenient for tourists to move around without encountering difficulty to obtain cash. They can use their credit cards in every ATM which is available in tourist destinations.

4. CONCLUSIONS

- International telecommunication and information systems and services is a vital ingredient for competitive advantage in a competitive global market.

- Tourism is becoming one of the biggest industries in the world. Many countries are concentrating on developing their travel industry to increase its contribution to the economy. Thus, a highly competitive market will arise in the future.

- International telecommunication has an important role to improve international society awareness about tourist destinations and cultures of Indonesia. It is expected the flow of tourists to Indonesia will grow as a result.

- Tourism and telecommunications have a strong correlation. Improvement of telecommunication facilities will increase the flow of tourists.

INFRASTRUCTURE REQUIREMENTS

INFRASTRUCTURE REQUIREMENTS

The papers in the previous section, particularly the last two by Sudarijanto and Soerjodibroto, discuss the telecommunication infrastructure requirements for tourist information services and, thereby, prepare for the further consideration of infrastructure in the five papers included in this section.

The lead paper in this section by Kennedy examines some future scenarios of tourism. He writes, "To a very significant extent, tourism marketing in the future will be led, if not directed, by the host communities rather than the developer, or the private sector. National and regional tourist offices will have the function of managing their tourism flow rather than simply promoting its growth." Thus, at a time of high projected growth in tourism, destination managers will be able to "niche market," which will in turn require appropriately designed telecom and information infrastructures and services. In the future, then, Kennedy contends that destinations can ask what broader benefit the tourist can bring to the local way of life. Finally, he encourages affiliations between the two great industries of telecommunications and travel.

In the second paper, Crawford defines a "hub as a manned communications centre, controlling all connected telecommunications traffic..." Hubbing arrangements reduce cost, increase operational efficiency and flexibility, and make advanced network facilities easily available. In the SITA international networks, the location of a hub is a matter requiring careful study, as in the case of locating a SITA hub in Sydney instead of in Hong Kong, Singapore or other Pacific sites. He concludes with the observation that "as the level of telecommunications sophistication increases world-wide, both in terms of technology and its application by users, the importance of hubbing will increase."

The deBellefeuille-Percy and Hoshino paper claims that the diffusion of high technology in Canada's tourism industry is hindered by the many small and medium sized enterprises for whom the high cost of technological implementation become prohibitive. Strategies for increasing the industry's access to high-tech such as collective computerized reservations are addressed, including the successful CHECK INN system. Other economic and political issues which impinge on technological adoption are also raised, such as personal privacy.

The next paper in this section by Sakurada focuses on reservation and information systems in Japan, and provides a contrasting example to the previous paper on Canada. In Japan today, Sakurada reports, in the typical travel agent's office, "there are CRT's for many different systems," each with some particular advantage and the shared disadvantage of taking up valuable

office space. He suggests that the JTB TRIPS System may help to reduce the "many systems" problem. In addition to the domestic TRIPS System, he also reports on the growth of international online networks to service international travel by Japanese nationals. Echoing the words of Kennedy in an earlier paper, Sakurada concludes that a "company can operate only if it can provide versatile service to meet the needs of individual customers, with lifestyles changing with social trends."

In his paper, Portugal claims that the intrinsic qualities of ISDN allow for rapid introduction of new applications. Those applications, he contends, that serve the needs of supplier and customer relationships will be well served by ISDN. He asks: "Is the tourist industry ripe for the development of such applications?" His answer is: Yes, but such telecom services must be specifically adapted, due to the large amount and varying nature of information needed by the tourist industry. He predicts that ISDN will be the preferred solution for the tourist industry in Europe, as evident in EUROTOP, and in the rest of the world in the next decade.

The final paper in this section by Kuwano provides a "broadcasting perspective." Not surprisingly, he believes that broadcasting can provide a "vicarious form of travel." Nevertheless, he believes that the net effect of broadcasting, particularly television, will be to stimulate an interest in travel. But he adds that new interactive services such as videotex will also play an increasingly important role in that they also provide access to visual information. In closing, he reports that in Japan a next generation telecommunications network is being developed that will "facilitate the transmission and reception of visual information just as simply as the telephone" now does for voice.

The papers in this section combine to specify requirements for a telecommunications infrastructure that will deliver an ever widening array of information services. On the one hand, it is expected that the "destinations" will seek through niche marketing those travelers who will contribute not only to the economic but also to the social and cultural benefit of the host community. On the other hand, those same travelers are expected to require more detailed, accessible, and comparative information before deciding to travel to a particular destination. This double demand by destination and traveler is discussed in the papers in this section and continued in the next section on information services.

L.S. Harms

TOURISM'S BASIC TELECOMMUNICATION REQUIREMENTS

Ian Kennedy
PATA-Pacific Division

1. INTRODUCTION

For want of a better term may I define tourism as "the industry created by people travelling". And, let me take a somewhat different approach to discussing the industry and its links and relationships with telecommunications.

Let me examine some future scenarios of tourism, its markets, their motivations, how to reach them, and their requirements.

I would also like to look at tourism from the destinations point of view because destinations, like their marketers, have a very real need for sophisticated telecommunications and in many cases, it is they, the destinations, which will be the major players in the industry of the future, not only the airlines, hotel chains, tour operators, etc.

To a very significant extent, tourism marketing in the future will be led, if not directed, by the host communities rather than the developer, or the private sector. National and regional tourist offices will have the function of managing their tourism flow rather than simply promoting its growth. They will increasingly fit and act within a comprehensive development plan for their region and will therefore be a part of a vision rather than an isolated industry operating without reference to a comprehensive plan.

The late 1980's saw tourism again boom and bust in very short waves. Remember when Singapore was overbuilt --- and how visitor traffic caught up. And remember when China opened up and Tianenman Square all but closed it down. Thailand boomed and now worries about the damage to its environment. Australia boomed in 1988 and could not maintain that growth rate in subsequent years.

In fact, the whole world of travel boomed in the late 1980's and the Gulf War popped the bubble, so that by 1991, every major airline in the world was reporting massive losses and mergers, buy-outs and buy-ins were the flavour of the month. As leisure travel in the 1990's becomes more expensive and more discriminatory, market segmentation, sophisticated management and accurate delivery systems will be the cornerstone of successful travel operations/tourist destinations.

Let us not be despondent about the early 1990's -- by the end of the decade, the Gulf War downturn will be but a blip on the chart of world tourism growth.

2. GROWTH IN THE NEXT DECADE

PATA sees that growth in the next decade, taking the number of international travel movements in the Pacific and Asia from some 40 million in 1989 to over 100 million in the year 2000, more than doubling. Most of that growth will come from Asia. One of our members, an international airline, calculates that in Asian nations, for every one unit of additional disposable income there exists a four-fold propensity to travel.

One significant outcome of that staggering growth will be that products and destinations will have the luxury of being able to "niche market." Of course, to do that successfully is a far more skillful exercise than the shotgun marketing approach which has typified much of our destination and product marketing in the 1980's.

For example, the American market, something of a leader in this area to date, is swinging away from mass print media such as daily newspapers to a preference for targeted minority interest media such as magazines. In communication terms, the U.S.A. is a market which fragments and then fragments again and although there are substantial differences in the make-up of media channels in other countries, the principle is nevertheless increasingly the same throughout the world.

It is no longer possible to communicate with broad-based markets. Each geographical market not only needs a different cultural approach but also requires a careful segmentation of the media channels to reach the desired target audiences. Anything less than this will ensure wasted resources and indifferent results from promotional efforts.

Direct response marketing is now one of the most potent weapons in the communication armory. Sophisticated databases allow a high degree of market segmentation and provide measurable results. Tactical use of databases allow marketers to adopt their core message to define segments of the market. The key to successful communication in the 1990's is, "think small and match your message to your target public and communicate with them using channels which they respond to. Don't waste your money spreading the net widely".

To identify the new important markets of the future and their niches will, of course, require far greater research than has been the case to date. Research to discover the most appropriate product/market matches. Such intelligence on Asian consumers, particularly those of the future, is very sparse indeed.

3. FAILURE OR SUCCESS?

The tourism marketing failures in the future will be those who believe that the product of the 1980's will continue to sell, through the same distribution channels, in the 1990's. The clever marketer by contrast will have researched his potential markets, established their motivations and assessed the most effective trigger to bring them to action. The most critical feature of this process and the one least professionally approached at present is the initial motivational research to establish "who" in the entire population is my market and what will turn him/her on.

For example, Australia is entering a decade of dramatic change -- one that will be dominated in every aspect by the 35 to 54 year-olds -- the postwar baby boomers. Those born between 1946 and 1961 and now aged between 29 and 44 will control the wealth, and the demand and they will set the trends during the 1990's. The 1990s will see two major groups merge; those with high income and those with marginal income -- in other words, the asset rich and the asset poor, spenders and those who merely subsist. The middle class will be severely depleted. This does not suggest mass poverty in the 1990s but rather that the wealth gap will widen.

Worldwide statistics show an increasing number of people over 50 and an increasing number of experienced, second time travellers on the market. Those are the people for whom the old, mass tourism is no longer as attractive as it once was. The new tourist is better educated, more experienced and wants more than giant hotels and hamburgers. This is the kind of tourist who's seen something of the local culture and the environment of the country he's visiting, on TV or in school if nowhere else, and who now wants to know more about it.

So, to recap thus far from the product/destination point of view, the tourism market will grow in the decade ahead to approximately double its present volume by the year 2000. Most of that growth will come from Asian nations which are currently regarded as emerging. The motivations to travel will differ from those of their counterparts, I believe, particularly in regard to the importance they place on the environment and cultural appeal as features.

4. TYPE OF VISITOR

Be aware that it will not be long before destination managers become selective about the type of visitor they want, not just any visitor, but one who contributes something more than just the dollars to the community. There is a marketing adage which says that one should ask "who is my market, what does he want?" I suspect the host destinations of the future would prefer to ask

"who is my market and what do I have which I can share with him to the benefit to my way of life?"

We might in future, therefore, look not so much at the development of successful tourism, but rather recognise how tourism can help the nations and regions that we are concerned with to develop. Because when one talks of successful tourism, it is necessary to ask successful in whose view? The carriers, the entrepreneurs, the hoteliers or tour operators or in the view of the host, the man in the street in our destinations. Each one wants visible enrichment from tourism, but of course, in different ways. The man in the street wants tangible enrichment of his total way of life which really means more than additional dollars. It may mean for example, educational opportunities for his children, security, improved living conditions, access to new products, and the opportunity to produce goods and services himself.

These are values of tourism which are too often ignored when voices analyse its costs and benefits. I suspect that if we took a more positive approach to these reflections than we typically do, we will start to see tourism as a very definite and positive factor in the development of the region.

5. IMPACTS OF TELECOMMUNICATION TECHNOLOGY

Over the past 40 years, the process of technological change has accelerated as never before. The world has become a more interdependent place, thanks to the extraordinary developments we've seen in telecommunications and transport. Today what happens in one place, affects many other places. We no longer live, like our ancestors, in settlements isolated from each other, unaffected by what each other does.

And, over the past 20 years, the technology, in particular, of data processing and communications, have been converging with some extraordinary results. And it's tourism that we have to thank for that because, I'm told, the very first time a computer and a communications network were used outside the military was back in the 1960's when American Airlines used it to create the first computerised reservations system.

Today that technology has advanced unbelievably far and we are on the edge of the biggest advances yet, moving towards a global communications network that I'm also told "will operate through fiber optic cables carrying megabytes of data, voice, fax, telex, telephone and messaging to semi-intelligent user hardware available to the individual using three dimensional chip architecture and light control switching systems that will eventually put a database on the wrist of the man in the street."

Telecommunications and data processing have already made it a shrinking world in one way. I sit in Sydney, for instance, and instantly through fax and phone and computer, do things that would have been impossible, or at least would have demanded an entire office staff, 10 years ago. We all make instant contact with the other side of the world without a second thought.

But in one way telecommunications hasn't shrunk the world because, the easier it becomes to access people and places, the more the average person is becoming aware of the immense cultural and environmental diversity there is out there around the planet. At the simplest level, television constantly reminds us of how much there is to experience that is different from our own lives. And the more our educational levels and income levels rise, the more we want to have those experiences.

The surge of cultural pluralism which the telecommunications revolution has generated, and will continue to generate, is something for which adequate preparation is not being made today. Governments still live in the 19th Century, in islands of nationalism, in ghettos of sovereignty, in the hierarchy of nation states. But your clients don't. Everyday tens of thousands of tourists give their host countries direct contact with the outside world and in so doing, teach the people of their host countries to value and preserve their own traditions and customs.

It is vital to recognise that our national characteristics and natural amenities are the basic raw materials of tourism and if we only regard tourism for its economic benefit, those assets will have been consumed rather than conserved and the result will be a deprived rather than an enriched community.

6. OPPORTUNITIES FOR FUTURE COOPERATION

So the question might more interestingly be not how can telecommunications help the travel industry, but rather how can the two industries work together for a beneficial and sustainable future.

In answer, I think it is important that:

- The travel industry generally should more fully understand the technological development in the telecommunications pipeline as well as its impacts on their industry and also potential users of this technology by their industry.

- Tourism institutionally should seek opportunities to influence the use or application of new technology and, where possible, assist in the development of global standards for that technology.

- At a practical level the travel industry generally will have an increasing need for information of a socio-cultural type on consumer trends and marketplace information.

- Institutionally, also, the tourist industry should ideally work with its telecommunications counterpart on that technology which will have the effect of changing lifestyles and work habits, in order to optimise the compatibility of the industries with such changes.

- The travel industry generally should advance techniques for the provision of information at all levels of its industry.

It is also, I would suggest, beholden upon the telecommunications industries to recognise, perhaps more fully than they presently do, some of the basic factors of the tourism industry, particularly in its rapidly changing mode. While recognising that both tourism and telecommunications are industries of the future, I'm reminded of the saying that the pathway to the future is not found, it is made, and in the process both the maker and the destination change.

Finally, it might usefully be recorded that it is extraordinary in my view, that these two great industries, which are dependent upon each other, should have no formal communication. And I would leave with you the thought that the Pacific Asia Travel Association has, as a matter of recent policy, actively sought affiliations with compatible bodies such as the International Air Transport Association, the World Travel and Tourist Council, and the World Tourism Organisation. Given what has been said, I feel sure there would be interest in extending such a liaison to include the Pacific Telecommunications Council, and I would suggest that we jointly pursue such a liaison in the near future.

ASPECTS OF TELECOMMUNICATIONS HUBBING

John Crawford
SITA, Australia & South Pacific Region

1. INTRODUCTION

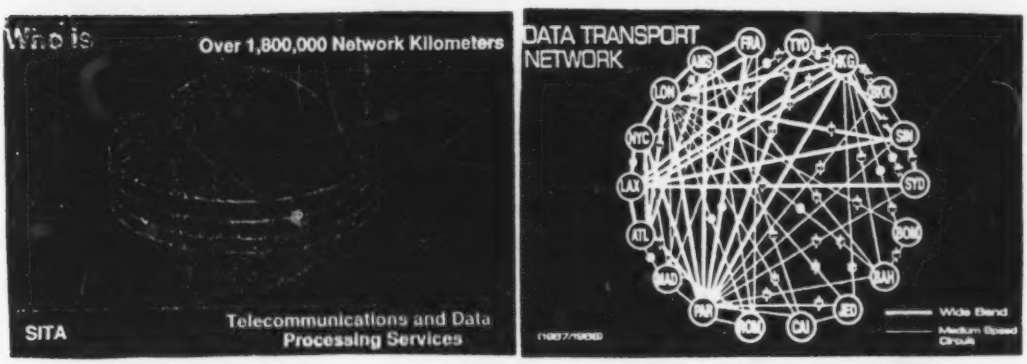
Although the concepts of hubbing are generally universally standard, there are enough differences in implementation to emphasize that this paper primarily addresses the experience of SITA and its member airlines in the implementation and operation of a world-wide data and messaging network with many major hubs. It is perhaps appropriate to give a brief overview of SITA.

SITA is a not-for-profit, co-operative, fully international organisation. Formed in 1949, it provides and operates world-wide telecommunications and information services for its more than 400 airline and associated industry members in 184 countries and territories. With more than 750 centres and access nodes, the SITA network architecture relies on the hubbing concept. A wide range of data processing services, including multi-hosted reservations and cargo facilities, flight planning, airport handling, air to ground communications and many other activities complement the world-wide network.

SITA created the South Pacific Region centered in Sydney in 1990, with its principal objectives of increasing the size of the Sydney Hub within the world-wide network and establishing a Research and Development Centre.

The following schematics give some idea of the network size and the hubbing arrangements.

FIGURE 1: SITA NETWORK AND HUBBING



2. HUBBING

For the purposes of this paper I am defining a hub as a manned communications centre, controlling all connected telecommunications traffic in a geographical area with connections to other hubs in the network thereby providing alternate routing to/from end destinations. Major traffic concentrations within the geographic area can be sub-hubs in their own right.

Ideally, for a balanced international operation, the hub not only acts as a controlling focus for the traffic of regionally connected customers, but also provides transit services for traffic from other hubs on the network and (to enable maximum utilization of trunk bandwidth) is locally connected to a service such as a data processing centre to attract the traffic of "off shore" users.

Why do companies use major hubbing arrangements?

- Costs. The concentration of traffic by TDM's or traditional concentrators or packet switching systems is most cost effective under normal PTT tariffs;
- Operational efficiency. The hubbing centre can overcome cultural, language, political, and time zone issues as well as local technical problems that would pose difficulties for an operation controlled totally at a centralised location;
- Flexibility.
    - Alternate routing through other hubs for reliability and efficient load sharing
    - The ability to shift bandwidth from one hub to another to optimise dealings with PTT's in terms of both tariffs and quality of service;
- Easier availability of Virtual Private Network facilities for customers.

In the competitive environment, operating costs and quality of service are the dominating factors. This is particularly true where industry specific protocols and services must co-exist with standard offerings such as X.25, X.400, EDIFACT, etc. Hubbing allows the backbone networks to operate on a standard platform such as X.25 with non-standard functions being handled from the hub.

3. CONSIDERATIONS IN CHOOSING A PACIFIC HUBBING LOCATION

The following list of attributes (not prioritized) are strongly recommended for evaluation in selecting a major hub in the Pacific Basin:

- high quality telecommunications services with international fibre optic cables and satellite capabilities;
- maximum satellite footprint for one hop transmission;
- attractive tariff options from both international and domestic PTT's including seamless physical connectivity between international gateways and domestic/regional sites;
- liberal telecommunications regulatory regime;
- stable political and economic environment;
- stable currency;
- low inflation rates both absolute and real;
- comfortable industrial relations practices;
- favourable tax incentives;
- ready access for expatriate employees on a temporary or semi-permanent basis;
- availability of good technical resources for sophisticated technology platforms;
- low taxes and duties and simple procedures for the importation of equipment and spares;
- good domestic and international airline services;
- availability of personnel with a good command of the English language; and
- a comfortable environment and culture, e.g., a standard of living, quality of life, good standards of education, pleasant climate, etc.

4. THE SITA EXPERIENCE

Although hub sizing and location is clearly dictated to some degree by regional traffic density, SITA constantly reviews the performance of hubs to ensure maximum cost-effectiveness of its world-wide operation.

The network topology is reviewed several times a year using detailed traffic flow statistics in a program which determines the optimal capacity of trunk circuits. As previously mentioned, widespread hubbing allows SITA to shift bandwidth from one hub to another as appropriate.

Many countries which are still reluctant to embrace deregulation apply punitive conditions for the handling of third party traffic. SITA, being a private network for its members, is not in breach of such conditions, but future developments are limited

as a result. Nonetheless, the hubbing concept does give flexibility in that any affected circuit(s) can be re-routed to a different hub.

Currently, the availability of leased circuits world-wide falls well below the 99.5% availability target which means several hours down-time a month on a 24 hour operation. The need for alternate routing between hubs is therefore essential in maintaining quality of service.

5. WHERE IS THE NATURAL HUB FOR THE WESTERN PACIFIC RIM?

The answer, of course, is that there is no single location which can claim this title. Nonetheless, there will continue to be increasingly competitive pressures to attract and retain the presence of hubbing entities by many countries in the Pacific region.

Accordingly, it will become much more essential for prospective hubbing locations to establish their credentials and to maintain them.

In the Australian context most Pacific countries can offer competitive hubbing facilities and a sample selection of these competitors, with a snapshot of their strengths and weaknesses, is reviewed below.

Hong Kong

+ traditional economic and financial centre of the Orient
+ good local technical resources
- uncertainty of 1997
- rising costs as emigration proceeds

Singapore

+ strong competitor to Hong Kong in recent years with favourable tax incentives
+ stable economic and political environment
- somewhat flexible telecommunication practices

Japan

+ technical and economic centre of the region
- high costs
- restrictions on English language capability

New Zealand

+ totally deregulated telecommunications environment
+ traditional cultural bonding with many Pacific Island nations
- satellite footprint limitations
- geographic position on cable routes

Having regard to the above, the key strengths and weaknesses of Australia for a major hubbing location can be summarized as:

Strengths

+ leader in a number of telecommunications technologies
+ stable western political and economic institutions with minimal uncertainty as to their on-going viability
+ mature and experienced PTT's with competitive tariffs in relation to non-U.S. competitors
+ good cable and satellite options
+ comfortable culture and lifestyle
+ close proximity to Pacific Basin
+ Government incentives available
+ excellent English communications skills both technically and non-technically
+ sympathetic immigration arrangements

Weaknesses

- a worldwide reputation, regardless of fact or fiction, of industrial turmoil and restrictive work practices
- balance of payment difficulties with inflation higher than many competitors

In actual fact at this point in time, the decision facing large networks such as SITA is usually not whether to site a hub in one geographic location or another. The decision is more oriented to the relative size and importance of a hub. In this context Australia has much to offer.

In a comparison of a technical site location between Singapore and Sydney made last year, the following factors (from a range of sources) emerged in favour of Sydney. This is given, not as a criticism of Singapore, but rather to emphasize the need to determine what factors can influence the decision of prospective hubbing users.

- cheaper than Singapore for food (for the same basket of foodstuffs, Sydney was US$250 p.m.; Singapore US$410)
- cheaper than Singapore for accommodation, especially residential (for good quality family housing, Sydney was US$2640 p.m.; Singapore US$3980)
- cheaper than Singapore for salaries of skilled telecommunications and computer staff (wage increases of 20% p.a. have been common in Singapore, with high shortages of skilled employees - Australia had 383,000 skilled information technology employees. Singapore had only 38,000)
- equal to Singapore for cost of living generally and construction costs for commercial accommodation
- climatically far more desirable a location for expatriate employees
- extremely well serviced by quality schools, universities, health, community and recreational facilities
- a diverse cultural mix, with a wide range of multi-cultural facilities and relatively free from prejudice
- home to some of the world's best telecommunications providers (Telecom and OTC) with attractive tariffs, high quality and services, and a virtually deregulated commercial environment
- well serviced by university graduates in the business and information technology fields (Sydney graduates three times as many business students as Singapore each year)
- the optimum choice for 39% of the world's top 20 business service firms for Asia Pacific regional headquarters (Singapore attracted only 6% of such firms)

In short, a case can be made that Australia is the premier information technology economy of the Asia Pacific region, with a market size of US$6.45 billion in 1987. The size of other regional markets is small in comparison - Singapore $0.31 billion; Hong Kong $0.37 billion and Taiwan $0.55 billion, for example.

6. IMPACT OF HUBS ON THE PACIFIC REGION

It is probable that as the level of telecommunications sophistication increases world-wide, both in terms of technology and its application by users, the importance of hubbing will increase. Also likely, is that with quality of circuits approaching 100% availability (through e.g., the PacRim fibre

optic cables) the importance of geographic location will continue to reduce as a consideration for the site of a hub. Combined with the greater use of E1/T1 circuits, the deployment of highly effective artificial intelligence techniques in network control and management and the potential for large scale sharing of networks, this will effectively reduce the number of hubs required on a global network. It is quite conceivable that such a network would only require four hubs - one each in the Americas, the Indian/USSR region, Europe and the Pacific Basin.

At that stage the race will be on for major communication countries and cities to obtain a nodal monopoly. For all countries the rewards are high as the resulting significant increase in traffic volumes could only serve to keep successful hubbing cities on the leading edge of technology, assist in improving the balance of payments and reduce the real cost of telecommunications to users.

The establishment of shared hubbing facilities, where the regulatory climate permits, is a key opportunity for entrepreneurial organisations who can offer a total management concept.

The task is not just for the telecommunication vendors but for all levels of the industry, government and the trades union.

HIGH TECHNOLOGY AND TOURISM: CANADA'S APPROACH

Keith deBellefeuille-Percy Phyllis Hoshino
Tourism Canada

1. INTRODUCTION TO CANADA'S TOURISM SECTOR AND TECHNOLOGY

Eighty-five percent of the core businesses comprising the Canadian tourism sector are small to medium-sized enterprises for systems development and implementation costs of high technology can be inhibiting. Information systems cannot operate in isolation: they are dependent on telecommunications technology to transmit the data. In a country with a population of 25 million, with a limited user subscriber base and fewer subscribers, the higher the unit cost becomes to users of advanced forms of telecommunications technology.

Indeed, past studies which looked at the degree of Information Technology (IT) penetration in the Canadian tourism sector by type of technology, e.g., airline reservations, property management, point of sale (POS), or hotel reservations found that the extent of technological adoption was a function of organizational size and wealth: innovators tended to be major organizations because they could afford the technology and the training to go with it.

Of the cases studied, over 50% of the technological diffusion could be found in airline reservations systems, hotel reservations systems of medium-sized establishments, POS in the food and beverage operations of large establishments, and in medium and large organizations within the tourism distribution sector. Generally, small businesses in the hospitality sector exhibited the weakest rate of diffusion as did most of the tourism sectors when teletext and cable tv technologies were considered. This gives you an idea of the degree to which technology has gained a toehold among Canadian firms in the tourism sector.

2. APPROACHES

The adoption of technology in several tourism-related sectors in Canada is lagging behind the technical achievements due to a combination of factors: economic, educational, and attitudinal. A resulting issue is accessibility to technology, not the availability of it, for the use of new technology is only circumscribed by the zeal and imagination of those wishing to exploit it.

Efforts are being made by Canadian systems developers to reduce the barriers among smaller operators through increasing the user

friendliness of systems by simplifying the technical complexity of IT: e.g., eradicating most of the problems associated with systems compatibility and reliability in the POS sector of tourism.

To get around high costs and achieve synergy among geographically dispersed, small-sized organizations, the tourism industry must strive for economies of scale through focusing on the development of collective reservation and information systems.

There aren't many such systems in Canada, except CHECK INNS (CHECK IN as it is more commonly called), a comprehensive, multi-purpose information system serving everyone from the individual traveller to tour packagers to travel agents to convention organizers through one toll-free call.

One of CHECK-IN's success criteria is its widespread accessibility to users, even to the small operator. Another criterion is its capacity to provide value-added information to the customer--something more than he/she anticipated. And this converts into longer visits and word-of-mouth destination referrals resulting in sustained tourism revenues.

I should point out that CHECK-IN's developers have engineered the system's capability to clinch the sale: CHECK-IN's own "Fax Link" system plays an instrumental role in closing the sale. Once a caller has requested accommodation reservations, Fax Link immediately transmits the request to the appropriate establishment and simultaneously confirms the reservation by giving the caller an identifier/locator code.

CHECK-IN is driven by the credo to "match needs" and by a strategy that ensures the build-up of a database sufficiently refined to be responsive to matching market information with tourism products at an affordable cost. The system also enables the development of spin-off computerized products. For example, CHECK-IN can also provide a customized direct mail service through its computerized distributed labeling system, matching targeted markets with a particular tourism product. There are few on-line systems like this in North America, which are so accessible at such a reasonable cost to the user.

A number of toll-free systems operate in provincial tourism offices in Canada whose services vary from solely disseminating travel literature to the provision of travel counselling, but none are as integrated as CHECK-IN. Many of these offices recognize that telemarketing is only a beginning use of the available technology and that greater gains in selling tourism are to be realized through the integration of technological systems.

The Federal Government's intervention into the application of high technology in tourism is called the BOSS system: Business Opportunities Sourcing System. BOSS has become a publicly available, market information service operated by the Department of Industry Science and Technology in co-operation with Canada's provincial governments. BOSS has incorporated a tourism component focusing on international calibre, export-ready products. Its database of selected festivals, events, attractions, accommodation, transportation, sales and distribution channels is available worldwide to tour wholesalers, tourism suppliers and government personnel, through trade commission offices and directly by contacting the BOSS section at Industry, Sciences and Technology Canada.

BOSS is also prospecting for link-ups to complementary systems where the alliance would be mutually benefitting, e.g., COMPUTRIP, an independently Canadian-owned, trip routing information system servicing tour operators and planners. COMPUTRIP provides a selection of routes between two locations and also has the capability of providing information on selected accommodation and events by city along the particular travel route. BOSS's product database could enhance COMPUTRIP's and COMPUTRIP could add a route planning (refinement) feature to the BOSS system. BOSS is also considering the possibility of linking with a major GDS through down-loading its events and attractions database.

Apart from viewing technology and the impact it is or is not having on Canadian businesses in the tourism sector, we cannot ignore technology's implications for the international competitiveness of the Canadian tourism industry. I would now like to escalate the realm of this discussion to a more strategic perspective by linking the application of high technology to Canada's international tourism marketing strategy.

As Canada's National Tourism Organization, Tourism Canada has identified certain international markets as priority markets and has targeted customer segments within those markets.

Now in this business of tourism you have to recognize that we are trying to sell an intangible product: an experience, which makes the marketing of tourism the most information-demanding of all the tourism operational components. He/she who reaches the consumer the fastest, with the most information to enable a decision to be made, is likely to close the sale the first! We all know that enough cannot be said about the computer's capability with respect to the speed at which information can be accessed and the quantity of information which can be stored, given that information technology has become the chief integrator of tourism services.

We are living in a world where GDS's dominate and proliferate. They are swiftly becoming the tourism industry's direct pipeline to the cosmopolitan traveller.

Once again, recognition has to be given to the issue of accessibility to electronically available information, not the availability of technology itself.

For Canada the challenge is straightforward: how to market Canada electronically to those international markets which have been identified as priorities for us. How can we expose the right tourism product information to the targeted markets most effectively?

Everyone is aware of the high upfront costs of systems development which already amount to sunk costs for the major players who have invested in CRS's. Following this logic, Canada would not wish to mount a GDS of its own to market tourism internationally, but rather to enter into strategic alliances with existing GDS giants. This approach has a dual purpose: expose Canadian tourism in selected markets and facilitate the accessibility of these target markets to the Canadian tourism product(s). The question then becomes: which CRS can help Canada serve its priority markets better?

Recently, the Canadian-based GEMINI CRS has linked with Covia-Apollo to obtain exclusive rights to Apollo technology and ultimately an Apollo-based CRS customized for Canadian travel agents will be developed.

Right now we are employing a strategy of shopping for the best system upon which to piggyback our Canadian databases such as the tourism component of the BOSS system. At the same time, we are interested in accessing external databases for purposes of market research and business planning. Intelligence gathering of those target market segments requires a special vigilance: we need to tap customer databases to feel the pulse of fast-changing customer wants. The issue, then, becomes one of identifying a partner(s)/supplier(s) where mutual benefits will be realized.

Tourism Canada's marketing approach undoubtedly recognizes that managing the integration of technology used in the tourism industry constitutes the premier challenge for anyone involved in the tourism sector. Following this, we are placing a large emphasis on the formation of strategic alliances to conduct our business.

3. FOOD FOR THOUGHT

Canada is not alone in experiencing a lag between its adoption of high technology in the tourism sector and the level of technology that is out there. We are well aware that the limits of

exploiting technology are as unbounded as the creativity and ingenuity which rests with the individual industry participant in using information technology as a strategic business too. Don't forget, in the tourism industry, we are trying to sell an experience. Will we reach a time when the rapid advances in computer graphics and high definition technology will relegate us to nations of armchair travellers, experiencing vicarious travel solely from the comforts of our own homes? Or, will we succeed in using the same technology to tempt the consumer into experiencing the real thing?

Another factor which should not be overlooked is the potential role played by high labour costs in the service industry, in speeding the call for future applications of technology and its diffusion in the tourism industry. Mounting labour costs might force now-reluctant companies to turn increasingly towards exploiting technology as a means of controlling costs while maintaining consistent service levels. After all, there is credence to the phrase: Necessity is the mother of invention.

Many of you are aware of the vast impact of optical fibre technology in the telecommunications industry. The latest trans-pacific fibre-optic cable (North Pacific Cable) will give users a second fibre route to the Pacific Rim and the first direct fibre link between Japan and the continental US. A recent estimate has suggested that just 10 countries in the Asia/Pacific region will be using at least 1.3 billion fibre-optic circuits by the end of the decade.

Canada is already positioned favourably in the evolution of Integrated Services Digital Network (ISDN), the second phase of which uses optical fibre instead of the conventional copper distribution technology. The prospect of accessing a direct telecommunications highway to Asia/Pacific through fibre optic technology holds awesome promise for the North American, including Canada's, tourism sector. For example, multi-line telephone service with the capability of efficiently transmitting two-way videos, could spell a whole new packaging scheme for tour wholesalers and travel agents.

If one ponders the impacts which scientific and technological advances as a whole are having and will continue to exert on our lifestyles, and not just with respect to information technology, the implications for tourism/recreation are simply overwhelming.

Take 20th century video technology, for example. Earlier I alluded to armchair travel, enabled through advanced forms of video technology. Technologies such as sensavision TV, flight simulators, image libraries, videocycles, point-of-sale systems especially in the accommodations and food and beverage sectors, will transform the traditional patterns of supply and demand in the tourism industry, in unexpected and yet undiscovered ways.

Tourists who suddenly find that scientific and technological achievements can change their trip parameters, i.e., longer vacation periods and faster modes of transportation made possible through futuristic technology such as magnetic trains and advances in aircraft technology, will be seeking a different sort of vacation than before.

The industry must be ready to respond to changed demands with the right product offerings. Not only is science and technology transforming forms of transportation, but also recreational equipment, the higher demand for which is associated with increased leisure time: sense-enhancing devices which will contribute to the greater enjoyment of the outdoor enthusiast, all-climate clothing made from high technology materials, technique-enabling sports equipment--the availability of these kinds of equipment will influence the types of experiences people wish to have, hence market segments, within the tourism industry.

Flexibility is what is required of today's tourism industry. Success within the industry today will accrue to those tourism professionals who are the most flexible in adapting to impacts of the new technologies in all aspects. Tourism stakeholders have to gauge technological impacts in the industry not only from an information economic perspective, but from a lifestyle viewpoint as well. Not only the marketing, distribution and selling of tourism, but the product offerings themselves, must respond to the swiftly changing technological and scientific discoveries influencing consumer awareness and preferences and tastes. A great deal of uncertainty has been created in the tourism industry as new products and novel delivery/selling modes being introduced today, were likely unheard of a decade ago.

We have seen how CRS's have transformed the competitive structure of airlines. We have witnessed how the global alliance of CRS's has revolutionized the distribution of travel services and products. We have observed how GDS's have raised competitiveness concerns of international proportions, prompting the political, legislative, transportation, telecommunications sectors of nations to notice the especially pervasive impacts of technology in the tourism industry.

This is why the strategic challenges in the use of information technology to the tourism industry become particularly daunting. Because the sectoral ramifications of applying technology to strategic ends in tourism are so widespread, all kinds of collateral issues are raised.

4. CONCLUDING QUESTIONS

Who manages the distribution system? How much to regulate? Can CRS's be regulated to effect neutrality of display and still maintain the integrity of consumer protection laws?

Are major CRS alliances blurring the lines of competitiveness? Can governments really ask airlines to divest themselves of CRS's when they have already absorbed high sunk costs and associated risk in developing a strategic marketing tool?

And what about the personal privacy implications for consumers when the quest for database product expansion in CRS's is insatiable?

Is the advent of GDS's merely echoing the political configuration of regional trading blocs?

There are implications for our legal systems too. Laws and regulations are not keeping pace with the technological changes which are occurring. How will "territory" in cyberspace, that universe occupied by audio and visual signals travelling at the speed of light, be defined?

All of these are real questions being asked in the industry today. They require arcane solutions. One thing is inevitable, though, we will not impede the advances of high technology nor will we be able to circumvent its unleashed potential in the tourism industry.

RESERVATION AND INFORMATION SYSTEMS IN JAPAN'S TRAVEL INDUSTRY

Kaoru Sakurada
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1. INTRODUCTION

This paper covers:

- The current state of the Japanese travel industry and the application of the Computerized Reservation Systems, or CRS.
- The Japan Travel Bureau's computerized information and reservation systems as an example of Japanese travel agency's CRSs.
- The future direction of Japanese travel agencies and the development of CRSs.

I hope that this discussion of the computer and telecommunication systems used by the Japanese travel industry will be of some use to you; naturally, the development of systems in Japan is unique as it relates to our particular market structure and marketing strategies. The Japanese travel industry has grown very rapidly since World War II, as a result of the country's general economic development.

During that period, we have witnessed rushing crowds of customers flooding travel agencies in the major cities, trying to obtain train tickets and hotel reservations. These crowds provided the impetus for the Japanese travel industry to improve efficiency in ticketing, booking, and related office work through automation and mechanization.

In my personal experience, the only task of travel agents just after the war was how to "dispose of" customers! We never use that term anymore--nowadays the "customer is king.

One characteristic of the Japanese travel market is its seasonal fluctuation of demand, with large concentrations of travellers on a few peak days at the New Year period, in summer, and for the series of bank holidays we have in late April and early May--Golden Week.

Bookings for transportation can be made anything from a month to a year in advance, and seats are often sold-out within a minute of their official opening. This means that travel agents must secure reservations through as many computerized reservation terminals (CRTs) as possible in the peak seasons.

The scene in a typical Japanese travel agent's office is one where there are CRTs for many different systems; some have been developed by the airlines, railways, and by the travel agents themselves. Considering the prohibitive cost of land in Tokyo, we are not happy with the fact that so many computer terminals occupy the entire office space. But, the function of every CRT is different and each has its merits. For example, Japan Airlines' "AXESS" system is the fastest in reaching its CPU for flight reservations. The other systems have certain special functions as well, making it necessary to have many terminals in order to meet the high demand for travel.

In total, Japanese travel agents have invested some 10 billion yen or 100 million dollars every year in the development of their own competing CRSs. This has resulted in the installation of 6,000 terminals for the four big travel agent chains, including the Japan Travel Bureau (JTB).

As you may be aware, the three Japanese airlines are also very keen to develop and distribute their own CRS systems throughout Japan, in competition with the American CRSs, such as SABRE and APOLLO.

To date, 6,000 terminals for Japan Airlines' "AXESS", 4,000 terminals for All Nippon Airways' "ABLE", and 3,500 terminals for Japan Air Systems' "SKYCALLE" have been installed in their city offices and in travel agencies, for both international and domestic reservations, and for automatic ticketing.

Among the internal carriers, Japan Railways was the first to initiate a computer reservation system, in 1960. It is called the MARS system, an acronym for Multi Access seat Reservation System, and is the largest of the carriers' systems and has been repeatedly upgraded. In 1975, direct reservations from home via touch-phones was introduced, and since 1980, it has been linked to travel agents' CRSs, including JTB. An integrated service is now accessible from CAPTAIN terminals. CAPTAIN is an acronym for Character and Pattern Telephone Access Information system, a Japanese videotex developed by NTT.

Now to return to travel agent systems, it may look unusual to American and European eyes that each of the big four travel agents operates it own integrated travel reservation systems, sometimes paying development costs disproportionate to their profit returns.

But, I must draw your attention to the purpose of a travel agency system, which is to make a fair choice, among many competing carriers, of the best transport to fit a customer's plan. This is one of the functions of a proper travel agency system.

Even so, there are some doubts as to why each company must develop its own system, when all are substantially similar, with only minor differences, and not buy or lease a competitor's system to obtain a practical advantage.

The Japan Association of Travel Agents once tried to develop a common agency VAN, but the attempt was in vain as the member agencies could not reach an agreement. This fact may reflect the competition-loving Japanese mentality that you see in many industries. Obviously, everybody is vying for first place. Relations between the three Japanese airlines may be the same.

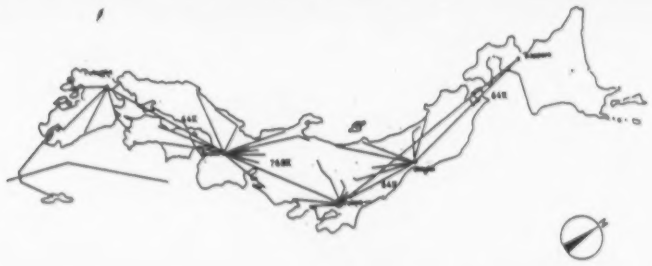
Thus, each of the middle and small-sized travel agencies also wants its own system, developed in a group or with the assistance of NTT and other system companies. Consequently, several similar agency CRSs, other than the big four, are being operated in Japan.

As for JTB, we are confident that our information system can be the best, because our staff on the front line is exposed to several hundred thousand customers in daily business throughout the country, and are thus in a position to know what is really wanted by travelers.

2. JTB TRIPS SYSTEM

TRIPS stands for Travel Reservation Information & Planning System. Since, both functionally and structurally, all of the big agency's systems are similar, let me present the TRIPS system to illustrate a typical Japanese travel agency CRS.

FIGURE 1: TRIPS DOMESTIC ON-LINE NETWORK



TRIPS' domestic system, divided into three basic functions.

- The main function is the Transaction Processing Facility (TPF) covering hotel reservations, seat reservations, package tour reservations, computer link, automatic ticketing, message switching, on-line report, and on-line batch.

- The MVS-Multiple Virtual System covers payroll, accounting, sales, bookkeeping, inventory control, reports and statistics, and on-line batch.

- The next MVS covers cash dispensing systems, customer information, point of sales system, customer authorization for credit cards, and information retrieval.

The TRIPS system was originally developed with a reservation TPF capable of processing 200 transactions per second. The same device used for airlines, is applied for faster collection, regulation, accumulation and retrieval of great volumes of information.

The TRIPS system was the first to be implemented by travel agencies, when it started its operation in 1969 as a Ryokan room reservation system. Some of you may be familiar with ryokans, which are typical Japanese lodging facilities.

One must take into account different considerations when dealing with ryokans as opposed to western-style hotels, and the system is, in fact, much more complicated.

As an example, ryokans can accommodate a variable number of guests, and the travel agent must know the flexible capacity of each room and the corresponding tariff per head. Sharing a room with others is common on group tours, and therefore the travel agent must be sure to input information about the sex of each traveler so as to avoid a mess!

Links to the major carriers' CRSs, like Japan Railways' MARS and JAL's AXESS, have enabled the agent to make a full range of reservations and automatic ticketing. Blocks of hotel and ryokan accommodations are also stocked and the agent's own package tours are listed.

To give you some idea as to the mammoth size of the system, 73,000 rooms at 5,000 lodging facilities, including ryokans, hotels, guest houses, pensions, etc., are blocked off and stored each day. Over the course of a year, the system will handle 27 million rooms.

As for transportation facilities not directly linked to our system, some 1,600 departures by about 100 carriers, (including railways, buses, ships and ferries, and rental cars), with approximately 120,000 seats per day, or 43 million seats per year, are blocked off and stored in our system. On top of this, 46,000 package tours are also processed through TRIPS.

The system has been upgraded and extended to cover automatic ticketing and printing of various service coupons for independent all-in basis.

This system is unequalled by others, and results in phenomenal enhancement of the standard of customer service provided, particularly for independent travellers wishing to tour Japan on their own, on an all-in, all-service tour.

For example, hotel rooms can be reserved a year in advance, but railway seats may only be reserved a month in advance of the travel date. The travel agent may input all the booking items to TRIPS on the spot, and at a later time, when the customer comes to pick up the tickets and hotel coupons, TRIPS will automatically issue the tickets and coupons once all arrangements have been completed. What's more, it is printed in Chinese characters used in the Japanese language.

The MVS function does not necessarily require speedy response, but flexible retrieval of information utilizing a DBMS, or a Database Management System.

TRIPS is unusual in offering on-line checking of credit cards, including our own JTB credit card (500,000 issued), through CAFIS, the Credit And Finance Information Switching System, developed by major Japanese credit card companies. The check is performed at the point of sale, and a cashing service is also available from our own cash dispensers.

In order to make the system user-friendly, colored terminal screens, full keyboard and magnetic pen methods, Chinese character indications, and faster and smaller printers have been used.

Since 1988, an on-line network among JTB branch offices in the U.S. and Europe has been in operation. American Airlines' "SABRE" system was also linked to TRIPS in the same year.

The most state-of-the-art development of the TRIPS system is its immense information retrieval function, which covers both domestic and overseas information. As an example, every spring many Japanese desperately travel to see cherry tree flowers, and Japanese tourists require information as to when and where cherry flowers are in full bloom. Accordingly, travel agents must prepare for the precise moment when the flowers bloom, which varies every year according to the overall climate that year.

The dynamic database must be maintained with constant care, as the contents change. At present, the TRIPS database can claim to being the largest of its kind in the world, with 130,000 items of information in stock.

As I have described it so far, you can see that JTB's TRIPS system is not merely a computerized reservation and ticketing service, but an integrated on-line information network. Today,

FIGURE 2: INTERNATIONAL ON-LINE NETWORK

JTB Network of Overseas Offices

	North America	Europe	Asia	Oceania	Others	Total
Locations	20	15	8	8	2	53
No of Employees	750	371	128	154	318	1721

TRIPS uses NEC's ACOS430-80 to its CPU and General Electric's "Marknet" for international circuits. The link to American Airlines' "SABRE" has enabled TRIPS' 4,000 terminals access to SABRE's reservation facility and foreign travel information.

To my great regret, the famed "SABRE" does not speak Japanese. This is an important factor in limiting the number of Japanese users of the system, despite its efficiency as a global distribution system.

A favorable trend I can see for "SABRE" is the increasing number of diversified, one-off travelers who want to book hotel rooms and rental cars for themselves through TRIPS-SABRE terminals. They will use the SABRE function more often.

One problem with the current international network is that it is incompatible with NEC's host computer in Tokyo and the IBM computers installed in JTB offices abroad. Another is that the land-to-land binary synchronized communication procedure does not fit perfectly with the X-25 procedure within this value-added network.

We hope to address these difficulties and allow our TRIPS system to integrate our foreign computer systems with the international on-line network using an exclusive circuit. In addition,

4,000 terminals have been installed in JTB's 300 city offices and 1,300 sub-agent shops.

The TRIPS system has the Tokyo Center and five relay stations on remote interchange computers nationwide to link with high-speed digital circuits for both data and voice.

3. INTERNATIONAL ON-LINE NETWORK

Although domestic travel is more important than foreign travel for the Japanese travel business, with 300 million domestic travellers who stayed away from home longer than one night, the number of Japanese going abroad is growing quickly. In fact, the governmental target of 10 million overseas travellers per year was reached last year.

This represents 5 trillion yen or some US$40 billion of total expenditure by Japanese overseas travelers last year.

Some of the characteristics of Japanese travelers abroad, as compared with other nationalities, follow:

- More group tours
  Because of the cost factor, many honeymooners even tend to join group package tours. This requires more advance booking to secure popular accommodations and other facilities.

- More tours including several cities
  As tours visit many cities in a short time, particularly for many European tours, arrangements are more difficult and complicated than tours with one resort destination.

- More changes and cancellations
  When changes in arrangements are requested, the ground operators must work harder to avoid possible troubles by the quicker dissemination of booking information.

These characteristics make the job of the travel agent even more cumbersome and costly. The international on-line network is expected to reduce the ground operation costs of tour operators to gain bigger profits.

JTB initiated its computer network in 1988 by connecting TRIPS terminals at JTB offices throughout Japan to overseas offices who act as the ground operators for local tour arrangements.

TRIPS uses NEC's ACOS430-80 to its CPU and General Electric's "Marknet" for international circuits. The link to American Airlines' "SABRE" has enabled TRIPS' 4,000 terminals access to SABRE's reservation facility and foreign travel information.

The existing TRIPS systems, with its infinite accumulated functions, has become almost too huge and complex to manage. In order to deal with possible difficult maintenance, and the development of additional functions in the future, we must be prepared to react with speed and flexibility to the new environment.

As the number of overseas offices is increasing, the on-line network must expand and make life easier with new functions. The typical European tour that most Japanese like to buy has stays at several cities like Paris, London, and Rome. Domestic sales offices throughout Japan are able to use the TRIPS tariff program in the host computer to calculate costs, without referring to the overseas office.

This kind of on-line network surely allows the sales office to gain a differential advantage in this area.

4. CONCLUSION

Elsewhere, Mr. Darby prophesied that the shortage of skilled labour and the increase in computer literacy among travelers will lead to the end-users doing more of the work involved in travel and event planning, by using wide area network interactive multimedia. This might mean the natural death of the travel agency.

Furthermore, some people say that the introduction of various new media will lead to more information appliances at home which provide attractive video games and PC communication, so more people will stay at home and fewer will travel.

In spite of these pessimistic prophecies, there are some positive innovations in the market. For instance, high definition TV used for tourist destination promotions could be very effective and have a strong impact on viewers.

Various multi-media providing lucrative travel information and electronic data interchange (EDI) technology will ease the bottlenecks at immigration and custom clearance and make for more comfortable travel.

Challenged by the outside world, the travel industry should try to survive by the generally accepted principle that the industry will be supported by consumers as long as it is capable of giving adequate information which reacts sensitively to their desires. The important factor is that the work of planning when, where, and how to travel ought to be determined before the customers ask for seats and hotel rooms. Therefore, sophisticated, prepared information, and consumers' easy access to that information are essential. In this context, the final stage of the development

of the agency's system will be the link to the home PC via multimedia networks.

At a public show recently, which was televised by NHK, JTB's TRIPS display attracted many spectators with its remarkable performance of information retrieval. A customer requested a ryokan which fulfilled three requirements: the ryokan must have an outdoor private hotspring, it must serve a wild vegetable dish, and it must allow a puppy in the room. Within a few seconds, the name of ryokan which met all three criteria was displayed!

You may be impressed by the strange habits of Japanese tourists! In any event, a company can operate only if it can provide versatile service to meet the needs of individual customers, with lifestyles changing with social trends.

JTB has recently assigned to its sales staff a notebook portable PC that can be linked to the TRIPS host computer by public telephone circuits from customers' offices, schools and at fair grounds to display its functions. The prospective customer can receive a faster response to his inquiries about desired destinations. This is an experiment in arming salespersons with information technology.

As for the customers, each travel agency ought to be retained by a customer or circle of customers. The JTB card, originally a customer card and now associated with MasterCard, is an all-purpose credit card with a half-million card holders. Including JTB card-holders, JTB plans to get 2 to 3 million customers by means of various differentiated services and the TRIPS system. The TRIPS center collects customer information, such as transaction records, credit record, and personal preferences, which are analyzed for service improvement and marketing strategy.

The key for survival and future prosperity for Japanese travel agencies lies in their ability to develop their own highly sophisticated computer systems, for both information dissemination and organization of customer information.

This is the direction we must take: we must carefully observe and keep up with the progress made in telecommunication and information technology.

ISDN APPLICATIONS FOR THE TOURISM INDUSTRY

Jean Michel Portugal
FRANCE TELECOM

1. INTRODUCTION

The intrinsic qualities of an ISDN (Integrated Services Digital Networks) allow for rapid introduction of new applications. Applications that serve the needs of direct customer-supplier relationships are particularly well-served by ISDN. Is the tourist industry ripe for the development of such applications?

Several recent market studies indicate that the range of telecommunications services must be specifically adapted, due to the large amount and varying nature of information where the tourist industry is concerned. Due to its suitability, ISDN will be the preferred solution in EUROPE and most probably in the rest of the world in the next decade.

The EUROTOP project, currently under development, is an excellent example of such an application due to its requirement for integrated transfer of graphics, text and data between the supplier and client site.

NUMERIS, ISDN in France, is already operational, and offers new opportunities for growth and diversification to the telecommunications operator.

2. INFORMATION TRANSFER IS CRITICAL TO THE TOURISM INDUSTRY

Information flows play a major part in the tourist industry. Their development integrates images and on line computers and they are also the basis of an increase in productivity in a market that is slowing down.

TABLE 1: ORGANIZATION OF THE TOURISM INDUSTRY

ACTOR	PRODUCT	OFFER	RETAIL DISTRIBUTION
tour-operator	complex	integrated	simple
travel agency	complex	diversifiee	simple
transport provider	simple	mono-product	simple

2.1 Diverse types of professions

In order to think of a trip, choose a destination and a means of transport, and before the arrival at the site, the customer must come into contact with a large number of middlemen.

The tourist industry is made up of intermediaries playing different roles in the economy involving either private or state owned companies. All are of equal importance, i.e., dependent upon one another.

2.2 New information technology and flow

For a better adaptation of the product to the needs, the general organisation in this sector should be taken into account and communication needs should be analysed at the level of each job.

Information exchange is essential. It forms the basis of each profession and is the "glue" that holds the system together.

Image processing (creating, filing, transmitting...) and on line data base manipulation (creating, amending and updating) are major factors in this system.

2.3 New development opportunities

The impressive growth witnessed in the tourism industry during the 1960's and the 1970's has slowed somewhat. An ideal opportunity to re-stimulate growth in the industry using new communications technologies exists in today's market. Namely, computerization and high speed integrated networks can be used to integrate offers of all sectors of the industry. This way, hotels, cruises, airlines, car rental agencies, tours, restaurants and others can tap new markets and reach a far greater audience to promote their products and services.

Videotex has already entered a new area of interactive applications for the use of the consumer (information, orders...).

From this time onwards, stronger links between the different intermediaries are the best way of improving efficiency and quality, i.e., productivity, in a world that is becoming increasingly competitive.

3. ISDN INTEGRATES AND OPTIMISES INFORMATION EXCHANGE

Within a sector such as tourism, information exchange takes on a strategic dimension. This results in the improvement of a network to allow a better information flow between the different intermediaries. This provides significant opportunities for the development of ISDN.

3.1 ISDN applications support:

Information and its exchange are likely to play an increasing part in today's economy. Real information distribution networks are going to take shape. They will probably be customised.

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TABLE 2: ADVANTAGES OF ISDN

ISDN: Integrated Services Digital Networks

- Efficiency: high speed and added value
- Universality:
  - simplicity and international standarizations
- Clarity: Cost allocation and administration
- Marketability: strong interest in tourism for ISDN
- Applications in Tourism:
  - products presentation
  - ordering
  - payment
  - document and mail transfer
  - image transfer
  - access to foreign services
  - electronic brochures
- Main factors of value for tourism:
  - speed, real time
  - costs
  - image quality
  - stable standards
  - flexibility
  - international connection capability

Standards guaranteeing quality (speed, added value) standardisation (normalisation, durability) and clarity (costs, administration) are required in this information exchange system.

ISDN is particularly well suited for providing targeted, value added networking solutions due to its integration of graphics, text, data and voice.

Solving sectorial problems with ISDN is certainly the best marketing positioning for any company which supplies services, including basic network providers.

3.2 Richness and Variety of Potential Applications:

By analysing the different jobs in the tourist industry, it is possible to attain an in-depth knowledge of the requirements of each profession.

About 15 possible applications can be identified, ranging from product presentation, for example, pictures of a hotel, to on-screen maps.

Apart from all these applications, there is another important factor in favour of ISDN market penetration. A characteristic of this sector is that it is organised around a network.

3.3 Market Expectations in the Tourism Industry.

Major ISDN users can be examined, e.g., travel agencies having to deal with the offer of services.

The main factors are related to improvement of dialogue between users: speed of transmission, increasing interactivity, picture quality. Secondary factors are reasonable costs and international standardisation.

Assuming adequate computer knowledge, a potential user will opt for an ISDN service assuming his needs are met and he has decision-making authority.

TABLE 3: EUROTOP: AN ISDN APPLICATION FOR TOURISM

EUROTOP OBJECTIVES:

- Improve Leisure Holiday Sales:
  - Use pictures
  - Know-how transfer
  - Improve training
- Provide More Information
  - General tourism
  - Hotel facilities pictures
  - Local environment information
  - Available associated offers
- Improve Selling Support
  - Pertinent data
  - Flexible search
  - Up-to-date information

4. EUROTOP: THE FIRST ISDN APPLICATION FULLY DEDICATED TO THE WORLD OF TOURISM.

EUROTOP has developed and launched a revolutionary system for easy integration of Tour Operators' offerings into electronic brochures and their subsequent presentation to prospective customers at travel agencies.

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The tour operator can continually change, add to or liven up his product by using new multimedia presentations. EUROTOP relies on ISDN.

4.1 What About a Cruise to Norway?

With the help of slides representing different views which can appear on the screen, we can discover how the application works.

The electronic brochure is a permanent link which has been formed between the customer of travel services, travel agencies and Tour Operators.

The use of the latest standards in the field of information technology, significantly increases the number of potential users.

4.2 The Concept of the Electronic Brochure

Just as in a catalogue, the main way of conveying information is through pictures.

From his screen, the travel agent will have at his disposal, a real window informing him and his client about all the various details on any destination.

4.3 Partners and Planning of the Project

EUROTOP has been established by three companies with the financial support of the Commission of the European Communities.

The pilot phase will group into an effective partnership--computer services companies, telecommunication operators and tourism professionals, among them the leaders in the U.K., Germany, and France and their most profitable travel agents.

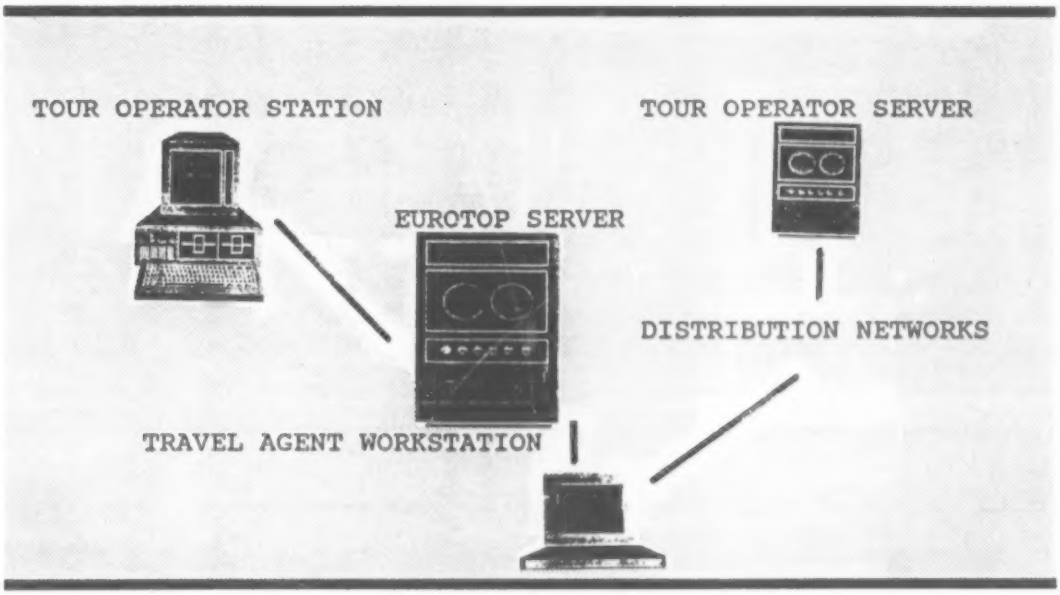
5. SUMMARY

To summarize, it should be restated that:

- information transfer is critical to the tourism industry;
- ISDN integrates and optimizes information exchange; and
- EUROTOP is the first ISDN application fully dedicated to the world of tourism

The pilot phase of EUROTOP begins in December 1991 in France, Germany and the United Kingdom with six tour operations and twenty travel agencies in each of these countries participating. The commercial phase of EUROTOP is scheduled for March 1992. At that time the question: "Is the tourist industry ripe for the development of ISDN solutions?" will be answered.

FIGURE 1: OVERVIEW OF EUROTOP



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INTERFACE BETWEEN TELECOMMUNICATIONS AND TRAVEL FROM A BROADCASTING PERSPECTIVE

Fumio Kuwano
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1. INTRODUCTION

Various telecommunications services have been developed in Japan as a result of the progress seen in telecommunications technology, deregulation of the telecommunications business, and innovation and competition in the private sector. The interface between telecommunications and travel, the main topic of this seminar, has made use of these services in a wide variety of ways.

With respect to broadcasting, for example, travel information of all sorts is broadcast on radio and television. A new demand for broadcasting which provides information about tourist spots is also increasing.

In the future, audio-visual media are expected to play a much more important role in the field of travel when new transmission systems for visual information and more advanced electronic image processing technology come into practical use such as ISDN (Integrated Services Digital Network), and HDTV (High Definition Television).

2. THE ROLE OF TELECOMMUNICATIONS AND BROADCASTING IN THE FIELD OF TRAVEL

In some cases, telecommunications provides a vicarious form of travel. A teleconferencing system can take the place, partially, of business travel, such as what was experienced during the Gulf Crisis when the demand for international teleconferencing service increased. A teleconferencing system can, in some cases, be more rational than travelling because it does not require any transportation and is less expensive.

However, in general, telecommunications is a medium which supports or promotes travel rather than be a competitor. Television programs and video-cassettes which introduce tourist spots, for example, will stimulate new travel demand on the part of many viewers since they function as powerful inducements to go sightseeing. As will be explained later, telecommunications systems such as videotex are now providing tourists with much useful information in Japan.

Telecommunications and broadcasting can contribute to the field of travel in many ways as follows:

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2.1 Improvement of business efficiency and service level of travel industry

Data communication systems enable travel agencies and airline companies to improve their efficiency and speed in executing many kinds of operations such as on-line ticket distribution system for hotel and flight reservations, and control of flight operations. While the direct users of these systems are travel agencies, hotels and airline companies, they also greatly contribute to improving the level of service to tourists.

2.2 Support of Tourists at Sight-seeing Spots

Tourists at unfamiliar sight-seeing spots have a special need for information about accommodations, transportation, attractions, leisure activities and souvenirs. Information systems which enable tourists to obtain the desired information directly are to satisfy such needs. The major systems currently in use include cable TV in hotels, videotex in local areas, and local broadcasting stations that deal with specialized topics.

2.3 Worldwide Diffusion of Information About Sight-Seeing Spots

Telecommunications will also play an important role in introducing sight-seeing spots to many people and in developing new tourist demand. A worldwide network system as well as a nation-wide system will be very useful for this purpose and there are strong expectations that broadcasting will play a key role here.

3. SEVERAL EXAMPLES IN JAPAN

Several examples are presented here to illustrate trends in Japan concerning the provision of information services which contribute to travelling directly or indirectly.

3.1 Audio Media

3.1.1 FM Event Broadcasting

Formerly, establishment of FM stations were limited to those whose broadcasting services were expected to continue for long periods. Additionally, in October 1988, a new legislation made it possible to establish a temporary FM station during a big and short-term event, such as an exposition, for the purpose of promoting the event. To date, twelve stations have been operated during local expositions, including the "International Garden and Greenery Exposition, Osaka, 1990", yacht races and other events.

An FM event broadcasting station covers the immediate area around the event site so that visitors and residents can receive and enjoy the service. The station provides information about the

event and traffic conditions, and it also broadcasts music programs which effectively enhance the atmosphere of the event. Furthermore, the station also deepens the bond between the event and the residents of the community. The FM event broadcasting stations have all been operated very successfully.

3.1.2 Highway Radio System

Traffic information is very useful and important for tourists as well as for local residents. This information is now provided by regular AM/FM radio stations at periodic times throughout the day. Another special system called the "highway radio system" also transmits the latest traffic information on traffic jams, road repairs, weather and other matters via their car radios.

One of the unique features of the highway radio system is that the service area is limited to certain portions of a highway so that accurate information is provided to each portion.

3.1.3 FM Community Broadcasting

The success of FM event broadcasting has generated a demand for FM stations with limited coverage, called "FM community broadcasting", which is intended to provide tourists with information. The FM community broadcasting will be to provide information on traffic, parking lots, accommodations, tourist spots, and to broadcast programs for skiers on the slopes.

The coverage of FM community broadcasting is to be limited to the nearby vicinity of a sightseeing spot and is expected to have a radius of several kilometers. The Ministry of Posts and Telecommunications is now making preparations to introduce this type of broadcasting service.

3.2 Visual Media

3.2.1 Videotex

A videotex system enables people to have access to visual information, in the form of still images, through the telephone network. This system is also used as an information-providing medium for tourists. An example is given here of the use of a videotex system in Takayama City, a famous sightseeing place in Gifu Prefecture. In Takayama, the local videotex system provides tourist information. Many terminals are located throughout the city, so that tourists can easily obtain information about accommodations (vacancies, charges, etc.), special products and parking lots. As the information is provided not only in Japanese but also in English, the service is very helpful to the thirty-thousand foreign tourists who visit Takayama every year.

3.2.2 Television Broadcasting

Television broadcasting, which is operated by both a public broadcaster (NHK) and private broadcasters, is not always providing travel information. However, travel programs are often aired which are very effective in introducing sightseeing spots to the whole country.

Private broadcasters often air programs through their national networks which publicize tourist places and greatly contribute to attracting people's interest in those places. In Japan, hot-spring resort programs of private broadcasters are extremely popular. NHK's year-round serial dramas focusing on various heroes in Japanese history help to popularize local places, which are the main stage of the dramas, and stimulate new travel demand.

3.2.3 Video-cassettes

Video-cassettes which can be seen so easily at home is now a powerful advertising medium comparable to leaflets in introducing sightseeing spots. Video-cassettes about major sightseeing spots such as Hawaii are available at reasonable prices at record shops and bookstores, and also at rental video-cassette shops.

3.2.4 HDTV (High Definition Television)

High Definition Television, called "Hi-Vision" in Japan, is now being prepared for practical use as a next generation audio-visual medium. HDTV will also play an important role in tourism in the future.

The picture quality of HDTV is far superior to that of the existing system, and the picture can be projected on a 500-inch wide screen comparable to a movie screen. Furthermore, electronic visual images can be transformed to prints such as picture postcards or leaflets. HDTV is expected to be applied to various fields other than broadcasting.

An example is presented here of HDTV programs in connection with tourism. Several years ago, Toyama Prefecture produced a HDTV program which showed Mt. Tateyama, a famous sightseeing spot in Toyama, and lent it to many organizations for demonstration. Picture postcards were also printed making use of HDTV technology, and they were distributed to all parts of Japan. The result was that all demonstrations of HDTV in Japan always introduced this program about Mt. Tateyama, which attracted as much attention as the HDTV facility itself.

In addition, in order to develop applications of HDTV which have close relations to local communities, Hi-Vision theaters are now being constructed along with the production of the associated

HDTV programs in "Hi-Vision Cities", twenty-three model districts for the promotion of HDTV. Hi-Vision Cities include many tourist cities such as Kyoto. In these cities, HDTV facilities with a wide screen display are located at travel offices, stations, airports and museums. Programs introducing tourist spots and special products are now being televised or planned for future showing.

Furthermore, Hi-Vision Cities are planning to exchange HDTV programs with other Hi-Vision Cities and diffuse their local visual information throughout the country. The HDTV pictures are now exchanged in packaged form such as video tapes or video-discs, but HDTV visual networks will be constructed in the future using B-ISDN (Broadband Integrated Services Digital Network), a network for visual telecommunications, which will provide inexpensive services.

4. CONCLUSION

The interface between telecommunications and travel is a very interesting field and is expected to become highly developed even from the viewpoint of broadcasting and telecommunications. As mentioned earlier, television images transmitted through broadcasting and visual telecommunication networks will play an increasingly important role in the field of tourism not only locally but also globally.

Television images will make it possible to overcome language barriers and facilitate communication between different countries, and thereby play an especially important role in the worldwide exchange of information. Visual communications will significantly contribute to better mutual understanding between countries, as well as to the enhancement of tourism.

The Japanese Ministry of Posts and Telecommunications, which is responsible for the administration of telecommunications, recognizes the growing importance of visual communication, and is promoting their development as one of its major priority policies. One of the activities underway is the construction of a next-generation telecommunications network, in which one will facilitate the transmission and reception of visual information just as simply as a telephone. Another activity is the promotion of international TV program exchanges in order to deepen mutual understanding. These efforts in the telecommunications field will also contribute to the further development of the travel industry.

INFORMATION SERVICES

INFORMATION SERVICES

When the network infrastructures described in the previous section are operational, it becomes possible to offer, in the historic words of the Maitland Commission, "voice and all of the other services." While quite a number of those "other services" were mentioned in the previous section, the five papers in this section specify in detail "hundreds" of additional services of actual or potential use for the host destination and the traveler.

The first paper in this section by Darby provides a comprehensive overview of the information components of the travel industry, identifies the technology used and the diverse information services offered, and examines the industry's use of information to gain competitive advantage in increasingly crowded markets. He enumerates the leading service providers for the travel industry and closes with a look at the opportunities for information service providers, using tourism in Hawaii as an example.

The second paper by Rouet describes the French videotext system which is used daily by 40 percent of the French population. All told, more than five million Minitel terminals are installed and some 15,000 Teletel services are available. In turn, these Teletel services receive more than 150 million calls monthly. The Electronic Directory alone receives 60 million calls monthly. Next most popular are the 400 touristic Teletel services. The author reports that the users of these touristic Teletel services "appreciate, above all, finding, without having to move or waste time, complete and up-to-date information."

The paper by Calvert concentrates on transaction terminals and credit authorization or, in the words of the author, "computers for people who do not know they are using computers." He traces across four decades the major changes of computer equipment in size, power and cost. He discusses the provision of terminals as remote points of sale for electronic authorization and draft capture, making it possible to routinely achieve "settlements" of accounts within 24 hours. He concludes that transaction terminals are currently available to meet almost every requirement of tourism and of many other fields.

The next paper in this section by Jea claims that applying computer and communication technology to the travel industry is an important integration. Videotext is a telematic service which is essential for an information economy, a point also affirmed by Rouet in an earlier paper in this section. After presenting statistics on the growth of tourism in Taiwan, Jea describes the

Chinese Videotext System (CVS), a successful public information service, which like the French Teletel, also provides a tourism database. In the future, Jea concludes, future improvements in videotext services for tourism will incorporate multimedia.

The concluding paper in this section by Archdale examines the special characteristics of tourism information, the way in which the demand is currently met, and the constraints imposed by today's electronic information systems. He draws parallels between how we function as individuals and sensible principles of information management. He then describes how a British database and reservation system, in a remote part of Scotland, known as the Hiline Operation, has successfully applied these sensible principles. He concludes with a warning: "Beware of the salesman who doesn't understand your business but promises his solution will be just what you need."

Information services numbering in the hundreds, perhaps thousands, according to the authors of the papers that follow, are now available and widely used, increasingly in the travel industry. And, the authors of all these papers agree that this is but the beginning and there is much more to come.

L.S. Harms

AN OVERVIEW OF INFORMATION TECHNOLOGY FOR TRAVEL AGENCIES

George E. Darby
Law Offices of George E. Darby

1. THE PROBLEM OF DEFINITION OF THE INFORMATION AND TRAVEL INDUSTRIES

About one year ago, top executives of 29 international airlines, hotel chain owners, railroads, and other travel businesses formed in Brussels the World Travel and Tourism Council. Participants included the Secretary of the U.S. Department of Transportation and the Chairman of the President's Council of Economic Advisors. They, along with cabinet members from other countries, were drawn by the growing economic clout of the travel industry. The World Travel and Tourism Council reported that transportation, lodging, and other travel services had gross revenues in 1989 of US$2.5 trillion and employed 112 million persons worldwide, about one out of every fifteen workers. At the same meeting, the World Travel and Tourism Council released the results of a survey of key policy and opinion makers from fourteen countries. Those surveyed ranked the travel industry as the 11th largest industry.

From the standpoint of information technology, the travel industry is a globally dispersed set of immense relational databases containing between thirty to forty million airfares, even more passenger name records and arrival and departure times, millions of room-nights, tens of thousands of rental cars, thousands of carriers--all connected by wide area networks that use the most advanced switching and circuits money can buy. The travel industry is the world's largest consumer of telecommunications services and its demand is growing. One reason for the travel industry's willingness to adopt and exploit new technologies, such as ISDN, on-line reservation and information services, computer integrated telephony, interactive multimedia, and distributed databases, is that the transportation, lodging, and travel-related products offered by the providers to the ultimate consumer are very similar. With very similar products, like seats in airliners and rental cars, and rooms in hotels, travel industry companies must differentiate their products through information technology. It is easy to identify information technology as the combination of computers and telecommunications, but comparatively little has been written about how information technology is used in the travel industry. This lack of literature arises in part from a problem common to the travel and information industries, that of definition.

As for the travel industry, how much of the entertainment and transportation industries should be included in the travel industry? Only entertainment purchased by people from out of

town? How much surface transportation should be included? Commuters driving to work? As for the information industry, sometimes defined as the stored knowledge and creation of mankind in constant distribution and metamorphosis, the task is no easier.

Information technology for the travel industry, though a narrower field of inquiry than the travel or information industries alone, is still vast. The managers of hotels see information technology principally as hotel reservation, guestroom telephone, property management, and restaurant management systems. Managers of airlines see information technology principally as airline reservation, aircrew and maintenance scheduling, freight management, and private voice communications systems. One of the most interesting segments of the travel industry, and the one in which innovation in information technology has been most intense, however, is that of the travel agency.

2. FROM BI-PLANE TO STARSHIP IN A YEAR

In the beginning was the blue box that fed a huge tube. Which means, computerized reservations systems ("CRSs") were one of the very first (if not the first) uses of private computers and private telecommunications networks. When the first CRS debuted in the mid-1960's, the technology was a mainframe linked to polled, dumb terminals. The terminals were large, dedicated affairs that could heat a small apartment in the Far North. Two decades later, the terminals were smaller, but still dumb, and still communicating using the original, odd 6-bit protocol called Airline Link Control. The use of Airline Link Control was limited to airlines and its intricacies known by few people. As a barrier to entry of newcomers to the reservations business, Airline Link Control was superb. Proprietary terminals, or "reservation sets," connected to proprietary networks and databases that displayed information biased toward the airline affiliated with the CRS were the norm. Also the norm were CRS contracts for travel agencies that made switching to a different CRS extremely costly. Contracts were typically 5 years in length and contained onerous clauses for liquidated damages, minimum usage, forced extension of contract for another 5 years if a single piece of new equipment were added ("rollover clause"), and prohibited the use of equipment not supplied by the CRS vendor.

The CRS displays were typically biased in many ways: the flights of the affiliated airline would be displayed more prominently and currently, the functionality of the CRS would be better for the affiliated airline, and the types of information available excluded much information of interest to travel agents, such as car rental, hotels, ground transportation, event calendars, and tour packages. A functionality bias is, for instance, the ability to issue boarding passes at the travel agency for the affiliated airline but not for other airlines. From the CRS

vendors' perspectives, their mission was not an unbiased presentation of various travel-related information, but the sale of seat-miles on the affiliated airline and secondarily the earning of transaction fees. The mission of travel agencies, however, is to be an unbiased and broad source of information for their clientele and to book all segments of an itinerary, not just air travel.

The U.S. Department of Transportation in 1985 required U.S. CRS vendors to offer at least one CRS service without presentation bias. Only this year has the Department of Transportation proposed rules that would remove functionality bias. The proposed rules, according to the Department of Transportation, are designed to reduce the CRS vendors' power to "control sources of information" and to "use technological developments to lessen vendors' control" over hardware. The proposed rules also include other major reforms of the CRS business, all to the benefit of travel agents worldwide that use U.S. CRSs. For instance, rollover clauses would be prohibited; users could connect compatible third party hardware selected and owned by the user to the CRS; maximum CRS contract term would be three years; travel agents would be able to access any information services, including competing CRSs, using the reservation set; "direct" status could no longer be displayed if a change of planes is required; no minimum usage requirements; and binding arbitration to resolve disputes between users and CRS providers would be available. The deadline for comments to the Department of Transportation about the proposed rules is June 24, 1991. In Europe, similar rules may be introduced to regulate European CRS vendors such as Galileo and Amadeus.

CRS vendors do "control sources of information" in that their CRSs concentrate on airlines, not hotels, tours, ground transportation, etc., and their contracts or software prevent use of their "reservation sets" (res) sets to access another service. If travel agents could obtain needed information from other sources, such as hotel chains and tour vendors, by online means, they would do so. Hotels, tour and cruise wholesalers, meeting planners, and rental companies realized this and began to develop "non-airline CRSs" that provided information that was not available from the airline CRS vendors. Access to the alternate CRSs remained a problem. A proprietary airline CRS reservation set has no ability to connect to another information provider. One solution has been for owners of travel-related or private networks with airline CRS "supplier" access to become an intermediary between non-airline CRS vendors and airline CRSs. Examples are WizCom offered by AVIS, and the Manor service by General Electric Information Services. Another solution has been the formation of a partnership of travel-related companies that has supplier access to airline CRSs. This route was taken by 17 owners of hotel chains who created "Ultraswitch" to link each hotel chain's internal CRS with the airline CRSs. The ability

under the proposed rules for travel agents to connect to information providers other than airline CRSs means that many more information providers could offer services to travel agents, at least in the U.S. Information gateways catering to travel agencies and corporate travel departments will likely form if the proposed rules are enacted.

As for the liberalization of hardware ownership and network access, the primary technological, and now policy, drivers have been personal computers and packet-switched networks. In the days of "blue box and a huge tube," if the travel agency had only one or two res sets (pronounced "rez sets"), the res sets were served by a terminal controller on the premises of the CRS vendor. If several res sets were used, the terminal controller was on the travel agency's premises. There literally was no way out (to another source of information). Modern practice of the CRS vendors, where several res sets are concentrated, is to install personal computers running Microsoft Windows 3.x, a local area network, X.25 gateway, and one or more 56 Kbps links. Most recently installed standalone res sets use asynchronous 9.6 Kbps or slower links. X.32 (dial X.25) and switched 56 or 64 Kbps service should soon be adopted by higher volume, standalone CRS workstations. In anticipation of the Department of Transportation's new CRS rules, software vendors are already marketing products that permit personal computers to access multiple CRSs simultaneously. If the new rules are enacted, and most industry observers predict they will be, the information technology available to travel agencies will truly go from Kitty Hawk to warp speed in one year. Parallel developments also support a major transformation of the capabilities of travel agencies.

3. OTHER NETWORK SERVICES FOR TRAVEL AGENCIES

Obtaining the right information and booking a reservation is half the job; getting tickets to the traveler is the other. Two new network services promise to ease the burden of ticket delivery. Travel agencies can now own networks of "satellite ticket printers" ("STP") that may be located anywhere the ticket stock can be monitored, such as in hotels and conference centers. The fact that the STP vendor's name (as opposed to the originating travel agency) appeared as the issuing agency on the ticket coupons, and the STP vendor collected part of the travel agency commission on each ticket printed, led to the creation and accreditation of "electronic ticket delivery networks" ("ETDN") in which the ETDN vendor does not necessarily have travel agency accreditation. ETDN vendors print tickets with the name of the originating travel agency and do so for a flat fee; the originating agency collects all the commission and pays the printing fee.

Another development of note is CRS vendor-provided electronic mail and messaging services. Now offered externally primarily between branch offices of the same travel agency, the e-mail service could be extended to other users. "Other users" is a mammoth market. Who goes wherever business travelers go? Airlines and their CRSs. Urgent messages at the boarding gate, anyone? How about global videotex?

4. CONCLUSION

Information technology used by travel agencies, hotel chains, and other travel-related companies is now catching up with that used by the airlines and airline CRSs. As the intermediary between the ultimate consumers of travel services and the travel service providers, travel agencies equipped with modern computer and telecommunications equipment, and benefitting from regulations promoting liberalization of information services available to travel agencies, will substantially reshape the way travel services are marketed and delivered. This liberalization will likely be repeated in Europe and offers global opportunities for vendors of information technology products and services.

TELETEL: AN OPPORTUNITY FOR THE TOURISM AND TRAVEL AREAS

Catherine Rouet
FRANCE TELECOM

1. INTRODUCTION

The French videotex system, going by the name of Teletel, now is bearing the fruit of 10 years of experience and the result of technical, economic and marketing know-how.

Teletel today has over 5.6 million terminals in service. So, 40% of our population have access to a Minitel, either at home or in offices. Moreover, not far from 300,000 additional users already call videotex services from personal computers.

The some 15,000 Teletel services available receive monthly more than 150 million calls and the Electronic Directory, by far the most frequently consulted service, receives on its own, around 60 million calls.

However, if videotex flourished in France, it is thanks to a radically different approach to that adopted in most other countries.

Let us take a look at the Teletel network. On one hand, we find a range of terminals: the Minitel. It is the first key of the Teletel success. Minitels are easy and cheap to use in order to be available to everybody, without any training. But they are also efficient enough to meet the requirements of the business users. The basic Minitel, called Minitel 1B, is a dual standard terminal which supports both videotex and ASCII standards, as well as in 40 and in 80 columns display.

We can also find "up market" Minitel like:

- Minitel 12 with an integrated telephone set, an automatic videotex message recorder, an electronic repertoire plus autodial and autolog-on functions;
- Minitel 5, a portable Minitel with flat screen, connectable to a mobile telephone.

And because Minitel has an open architecture, it can be associated with a variety of peripheral devices such as printers, answers-recorders, computers and smart card readers.

On the other hand, in the Teletel system, we find the service providers. On the contrary of to other videotex systems, Teletel is an open system. An Information Provider can be equipped with

his own computer or be hosted by sub-leased ones. In the same way, he can choose the trademark and the capacity of his computer, ranging from micro to mainframes.

2. ELECTRONIC DIRECTORY

The only Teletel service developed and operated by FRANCE TELECOM is the Electronic Directory. It has played a major part in the short story of Teletel, and it is the second basic choice made by FRANCE TELECOM.

Overcoming the problems of paper telephone directories, increasingly voluminous, increasingly difficult and costly to update, the Minitel is now proposed to the telephone subscribers instead of paper telephone directories. In this way, the Electronic Directory provided the cost-saving justification for a large distribution of Minitel and allowed millions of users to become conversant with the Minitel and its exciting world.

Today the Electronic Directory provides, not only phone numbers, but also Telex, Teletex and Telefax numbers. And it exists also an Electronic Directory of the Teletel services.

Between Minitel and Teletel services, there is a switched access network: the Teletel Access Network, which uses Public Switched Telephone Network (PSTN) on the subscriber side while host computers are connected to the Public Packet Switched Data Network, the name of which is TRANSPAC.

Probably videotex in France would never have been such a success without the decision to use TRANSPAC for information transport. This was the third basic choice. TRANSPAC use has given to Teletel a quick nationwide coverage with a cost of communication independent of the user-host distance and on average, 10 times less than that of an equivalent telephone call. Moveover, thanks to TRANSPAC, Teletel services in France can easily be called at reasonable cost from any country with a packet data network linked to TRANSPAC.

A Videotex Access Point (VAP) realizes the interface between the PSTN and TRANSPAC and allows interesting functionalities like access to services by mnemonic names easier to remember than an 8 digit phone number (for example: AIR FRANCE to call the service of the French airline company).

3. CHARGING MODES

Different charging modes are also made available by the use of the Teletel Access Network. Indeed, when you consult a Teletel service, you have to pay for the communication costs paid to FRANCE TELECOM by the user amount to about $3.5 per hour. But

each user must also subscribe to the services he wants to consult and so he is allocated a password.

The Information Provider must administer the subscription, related password, calculate the sums due, send out bills and obtain payment. However, this method is totally not adaptable for a service aimed at a very large number of users who call the service occasionally and may wish to remain anonymous.

The subscription is an economic constraint for the service provider because the subscription management and billing costs would be too high for him. And it is a psychological constraint for the general public users who are generally very reluctant to enter into written agreements with service providers and are discouraged by the idea of multiple subscriptions.

These are the reasons why FRANCE TELECOM introduced "Kiosk Mode charging". This innovation was determining for Teletel and is another key of its success. In this new way of charging for use of videotex services, there are no subscriptions, no passwords, and no direct billing for service providers. Instead, users pay for Teletel calls on their regular telephone bill and FRANCE TELECOM hands over a proportion of the collected sums to remunerate the service provider. These payments are based on traffic statistics and the more popular a service, the greater the Information Provider's income.

Kiosk is multirate in order to pay the Information Provider according to the added value his service brings. The user pays from $8 to $85 per hour and from $4 to $75 are handed over to the SP.

So, to sum up, 4 basic choices can explain the Teletel success:

- a low cost and easy to use terminal: the Minitel
- the use of Transpac network
- the kiosk
- the Electronic Directory

4. CHOICE OF SERVICES

But Teletel is not only a technology. It is also, and above all, a large choice of services increasing both the efficiency of professional end-users and the quality of life of residential ones.

And this is a fundamental point. You can have the most sophisticated videotex system in the world; if the users have no attractive services to consult, your system will be useless.

After the Electronic Directory, by far the most consulted service, the other most used applications concern, by decreasing order:

- transportation, with schedule consultation and reservation of seats on planes, railways and boats.
- commercial services and distributive trades, including armchair shopping
- banking and stock exchange, which allow to consult one's bank account and to know the exchange rates
- tourism and travel, with practical information on foreign countries, tourist resorts, and reservation systems.
- press, radio, TV, which provides sports results and news from all over the world in real time, around the clock.
- local administrative information including results of examinations, weather reports.

Professional users consult transport, banking and general information services but also:

- professional data banks such as hotel legislation, transport regulation, directory of tradesmen, socio-economic indicators,
- professional messaging services,
- business services (orders, billing, market prices,...)

For hotel keepers or restaurateurs, applications like detection of stolen cheques, situations wanted or vacancies are very useful.

More, for all these Information Providers, Teletel is already a safe investment as more than $380 million were handed over to the kiosk information providers in 1990.

In this context, more and more IP continue to enter the market with better answers to the requirements of the users and innovative services. The growth of the market is now self-sustained with a good balance between home and business use (30% of calls coming from professional users).

5. TOURISM AND TRAVEL

The consultation rates of the different Teletel services show that tourism and travel are fields of predilection for the creation and the use of Teletel services.

There is not one, but several tourist worlds. In fact, tourism is a three-dimensional world: many professions (hotel keepers, travel agents, tour-operators, tourist offices, transport companies, etc...) offer very different products (accommodation, seat in plane, train or boat, leisure activities, conducted tour, etc...) with a geographic dimension ranging from accurate information about a tourist resort to general inquiries about foreign countries.

Only, a powerful technology like telematics can integrate these three dimensions and answer quickly to the tourists' requirements.

The offer of services in tourism and travel is wide and various. More than 400 services allow the professionals of tourism to enlarge their clientele thanks to a best information and more effective marketing methods.

The most of services propose classical applications of information and booking:

- all the French transport companies offer a Teletel service with their schedules and tariffs. Most of them allow their customers to book their seat directly by Minitel.
- in the same way, thanks to the services provided by tour-operators, the tourist can select the travel that best answers his criteria of price, activities, climate,... Often, he can also book his tour and pay with his credit card.
- restaurants and hotels propose also multi-criterions selections and booking services.
- tourist resorts give Minitel any information about their resources in accommodation, leisure, activities from day to day. Numerous tourism offices manage their resort through a computer central reservation accessible by Minitel.

These services are specially appreciated by the Minitel users, allowing them spare time, to avoid dull exchanges of letters.

But thanks to videotex, one can offer services impossible to render by other means:

- videotex allows to keep up to date information instantaneously. So you can know in real time the height of snow in any winter sports resort, the exact time of arrival of a plane, the weather in any place in the world,

- the power of processing of videotex make possible expert systems like the search of the best itinerary between two towns, including criteria of speed, cost, tour attractiveness, and

- by shortening the exchanges of information, tour-operators can propose cheap tickets for last time sales; hotels can communicate their last availabilities.

6. CONCLUSION

To conclude, the contribution of Teletel in the tourism and travel area is made in two directions:

- the tourist services illustrate the extremely positive contribution of Teletel towards the improvement of the quality of everyday life,

- to the professional in this area, Teletel brings productivity and efficiency, the possibility to offer a better service to their customers, a broader exchange inside the profession.

The next evolutions of Teletel, with an increase of the transmission speed, the Minitel with a photographic quality, the telepayment, the interconnections more and more numerous with other countries, would reinforce still further the place of Teletel among the indispensable media for communication.

TRANSACTION TERMINALS AND CREDIT AUTHORIZATIONS

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1. INTRODUCTION

My topic of discussion today is transaction terminals and credit verifications. My presentation will include: a short history of my company, VeriFone; an introduction into the 4th wave of computing; transaction terminals and their operations; and, some examples of actual applications.

VeriFone was founded in Honolulu in 1981 and shipped its first terminals in 1983; it has now shipped over 1.7 million terminals. VeriFone is a little different than most companies founded in the United States. It is truly a global company with offices on five continents, all connected by its own electronic network which means most VeriFone employees have "virtual offices". Our "office" is dictated by where we are and the connection to a phone line as each employee always travels with a portable personal computer.

VeriFone currently sells its products to over 63 countries through a network of VeriFone International Partners. This network offers the VFI Quality around the world. This network and our philosophy are the keys to our success.

2. EVOLUTION OF COMPUTERS

Before discussing transaction terminals, it is necessary to understand the evolution of computers. VeriFone is leading the 4th wave on computing. In looking at the successive waves of computing, one finds the 1960's brought about mainframe technology.

Mainframes are designed to process great amounts of information. Normally, 100% up-time requires on-site repair capabilities. The relative cost point of the mainframe is in the millions; market size is in the hundred thousands.

In the 1970's came mini-computers. Repair men have beepers and capability to respond in 2-3 hours. The processing capability is not quite that of a mainframe and neither is the pricing at around $100,000 with the market potential in the millions.

In the 1980's, everyone can afford computers and the PC costs only thousands and handles the computing needs of an individual or specialized business use. If the personal computer breaks, it may be replaced; the software can be transported to an alternate system and repairs can thereby be effected in 1-3 days.

In the 4th wave of computers, transaction automation systems or transaction terminals can be found in the homes, shops, airports, schools, hospitals or even on the beach or an outside cafe. There is unlimited potential for placement and application. The cost comparison to previous computing waves is now in the low hundreds. If it needs repair, it is swapped out, maybe repaired or in fact just replaced. The transaction is a relatively small piece of information that is connected between computers--meaning PC mini or mainframe -- and the transaction terminal. In almost all cases, the users do not realize that they are using a computer. Transaction terminals have changed the way many of us do business. VeriFone defined the 4th wave as "COMPUTERS FOR PEOPLE WHO DO NOT KNOW THEY ARE USING COMPUTERS".

So, as we look at the evolution of computers, we see relative price points of $1,000,000 reducing to around $250 and relative market size changing from hundred thousands to hundred millions.

The world is changing around us and getting prepared for many more changes. The globalization of industry has placed a far higher requirement on transaction automation. Some of this globalization includes international banking, the European Economics 1992, liberalization of telephone certification, converging objectives and new global providers.

3. POINT-OF-SALE

Historically, point-of-sale has been nationally oriented and driven. Each country around the world has their own regulatory bodies and policies. Each culture has a different feeling towards money and credit. No one organization offers data and telecommunication solutions worldwide--across all boundaries. However, there are some similarities in needed solutions. Merchants or service providers desire to offer additional value to their customers. They have the ability to gather information and increase market power, thereby increasing productivity and profitability.

Today, merchants and service providers want to add value at the point-of-sale. As the boundaries of countries are opened and there are more providers, products and services go across these boundaries -- ideas and products are exposed. People will look for better ways to do business -- cheaper and faster. Today, there are many new technologies available to increase productivity and lower costs. Tomorrow will bring even more options.

To meet these changing requirements internationally, there are many challenges. Each market is different and has different requirements for equipment functionality, acceptance of plastic/automation, different languages, telecommunication and safety requirements, different import and export policy with many and varied political and economic situations.

4. TRANSACTION AUTOMATION

What is transaction automation and who are the users? The transaction automation industry is simply the automation of transactions whether it be a financial or informational exchange of data. Some current users are financial institutions, network service providers, retailers, oil and gas companies, supermarkets. Each day new organizations with new requirements enter the industry.

A terminal can be dedicated to one or many functions. Some of the current users include access control, benefits eligibility, credit authorization, electronic mail, inventory control, etc. In the financial area, the most common utilization is credit authorization with draft capture for automatic settlement of merchants' funds. Cash management and merchant reporting are also stimulated from the same transaction.

In a fleet fuel application, you can have inventory control, credit/debit, private label authorization and draft capture transactions; and on the reporting, you can expect sales, market research, employees time and attendance and electronic mail.

The benefits to transaction automation are many and varied. If you have a manual system in place, why automate it? The basic benefits in most cases would be to reduce time, costs and errors.

As an indication, let us look at 1990 market segments. You will see a total available market of 9 million + systems and the market value of $3.7 billion. Let us look at just some of the transaction automation equipment used today. Retail merchants, multi-line retail, medical and electronic benefits transfer, petroleum and (fast as cash) payment systems.

5. BASIC SYSTEMS

In the past at the point of purchase, for credit authorization, one had to call a remote processing center. This would take around 60 seconds and cost around 0.60 cents. Today, this can be done electronically with a reduction in time to 15 seconds and the cost of around 0.15 cents. So clearly, the electronic credit authorization reduces time, cost and fraud.

Let us increase the terminal functionality to provide additional benefits. In manual draft capture, a retailer would have to deposit the vouchers in its own bank whereby they would be sent to the cardholder's bank. Settlement would typically be 7-10 days. To produce the same result electronically, transaction settlement can be effected in 24 hours. Benefits will reduce float and paperwork.

Medical insurance sees the same benefits with payment of the service provider reduced from 60-90 days to less than 30 days. And finally, an application which reduces cost ten-fold -- time and attendance/payroll processing. You will see from job site to headquarters delivery and payroll at a cost of $10 per employee per week which can be achieved electronically at $1 per employee.

6. SUMMARY

While this presentation has not specifically talked of transaction terminals, it has provided information that suggests transaction terminals are available today to meet almost every requirement.

TAIWAN'S TOURISM VIDEOTEX SYSTEM

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1. INTRODUCTION

The travel industry is a very important area for most countries. Not only will it contribute to the economic situation, it also creates attractive places for people, both domestic and international, to visit.

Computer and communication (C&C) is an even more important area which should be emphasized by every country. It provides a powerful vehicle to establish a modernized infrastructure for the society.

How to apply computer and communication technology to travel industry is a challenging as well as interesting issue to enhance mutual developments. Videotex should be one of the solutions.

This paper presents our experience in this sector. The next section shows some official statistics related to tourism. Then the Chinese videotex system (CVS) is described and the access machine (AM) concept is explained. The tourism database available in CVS and the retrieval mechanism is also discussed. Finally, the paper arrives at a simple conclusion.

2. STATISTICS OF TOURISM DEVELOPMENTS

Taiwan is an island with thirty-six thousand square kilometers and twenty million population. After several decades effort, tourism is growing rapidly. Official statistics illustrate the results.

Table 1 gives the number of passengers arriving at the R.O.C. We can see that there are about two million arrivals annually during the recent three years. Among them, eighty-eight percent are foreigners, and the others are overseas Chinese.

TABLE 1. NUMBER OF PASSENGERS ARRIVING R.O.C.

YEAR	FOREIGNERS	OVERSEA CHINESE	TOTAL
1981	1,116	293	1,409
1982	1,111	308	1,419
1983	1,167	291	1,458
1984	1,227	289	1,516
1985	1,195	256	1,451
1986	1,333	277	1,610
1987	1,511	250	1,761
1988	1,697	238	1,935
1989	1,769	236	2,005
1990	1,713	221	1,934

(ALL IN THOUSANDS)

Among the passengers, the number of tourists is shown in Table 2. We find that over one million are tourists; over one half of passengers.

According to 1989 estimates, the daily expense of a passenger is US$187 and the duration of stay is 7.2 nights; the total amount of income is US$2.7 billion.

As far as hotels are concerned, there are many at international tourist standard. Table 3 presents the total number of rooms and the occupation rate.

TABLE 2. NUMBER OF TOURISTS VISITING R.O.C.

YEAR	NUMBER	% OF PASSENGERS
1981	1,096	77.7
1982	1,006	70.9
1983	974	66.9
1984	966	63.7
1985	900	62.0
1986	949	58.9
1987	998	56.7
1988	1,059	54.7
1989	1,100	54.9
1990	1,038	53.7

(ALL IN THOUSANDS)

TABLE 3: NUMBER OF HOTEL ROOMS AND OCCUPATION RATE

YEAR	NUMBER	OCCUPATION RATE %
1981	12,033	61.6
1982	11,810	60.6
1983	12,982	61.7
1984	13,503	62.6
1985	13,468	57.0
1986	13,268	63.4
1987	13,223	69.5
1988	13,174	71.3
1989	12,965	68.7
1990	14,433	----

TABLE 4: NUMBER OF CITIZENS VISITING ABROAD

YEAR	TOTAL	FOR TOURISM	TOURISM %
1981	576	280	48.6
1982	641	300	46.8
1983	675	281	41.7
1984	750	290	38.7
1985	847	318	37.5
1986	813	304	37.4
1987	1,058	449	42.4
1988	1,602	686	42.8
1989	2,108	1,096	40.8
1990	2,942	1,971	67.0

(IN THOUSANDS)

Table 4 provides the number of citizens visiting abroad. Two factors contribute to the fast growth: restriction of traveling abroad for tourism purposes was eliminated in 1979, and visiting mainland China was allowed in 1988.

According to 1989 data, top twelve destinations are ranked as follows: Japan, USA, Hong Kong, Korea, Malaysia, Singapore, Philippines, Indonesia, Germany, UK, Thailand, and Australia.

3. CHINESE VIDEOTEX SYSTEM

Videotex is a newly emerging information service that depends on combining computer and communication technology. This service has been offered to the public since August 1, 1987. It becomes a very important service because it provides the platform to develop a local database industry.

At present, the service falls into two categories: general system and dedicated system. The general system offers service functions such as information retrieval, close user group, message exchange, transaction, tele-software, gateway to external database, etc., while the dedicated system is a dedicated stock system to give real-time stock information including stock list and price, trading tendency, volume analysis for the stock market, etc.

Subscribers can lease the data circuit or use telephone switching network or via packet switched public data network (PSPDN) to access videotex databases and thus enjoy a convenient and inexpensive service. The access machine (AM) is the key element to make this possible.

The major components in an access machine are as follows: the terminal server (TS) is for subscriber log-in, database

directory, local databases, accounting, etc.; gateway server (GS) provides LAN/X.25 gateway function; the control unit (CU) monitors user status, controls TS and GS, manages the log file, etc.; the preprocessor (PP) is for data receiving, data manipulation, and data broadcasting, and the network management center (NMC) handles ID/password and manages local area network.

4. TOURISM DATABASE

The tourism database stored in the videotex center is provided by Tourism Bureau, Ministry of Communications. It contains the following information:

- Tourism related organizations
- Foreign diplomatic missions and consular services in R.O.C.
- Chinese diplomatic missions and consular services abroad
- Timetable of international airlines
- Timetable of domestic airlines and tariffs.
- Maritime transportation.
- Introduction of national scenic spots.
- Introduction of provincial scenic spots.
- Festivals and folk activities.
- Arts and cultural activities.
- Restaurants.
- International tourist hotels.
- Hotels.
- Hostels.
- Tourism video programs.

There are three ways to retrieve information:

- frame number;
- menu-driven method; and
- keyword.

5. CONCLUSION

The people of the modern world can retrieve information conveniently through the application of telecommunication and computer technology. Videotex is one of the approaches with the characteristics of user-friendly design in man-machine interface and popularity of terminal by using personal computer or television set with decoder. The integration of videotex and travel industry is an important step to mutual benefit. The result is positive.

Further developments are now being undertaken in the following two directions:

5.1 Interwork CVS with MARNET

MARNET is a multi-access reservation network which has been in commercial operation since November 1, 1989. At present, it services more than 300 travel agencies; airlines, such as China

Airlines, Thai Airways, KLM, Japan Asia Airways; and Mega Computerized Reservation Systems (CRS) such as Abacus, and Covia. Interworking between CVS and MARNET will be available in the middle of this year.

5.2 Multi-media Approach

The multi-media database which contains text, data, image, voice, and even video information will be a natural extension to today's developments. More new information technology will be introduced so that a bright future can be expected sooner or later.

MEETING TOURISM'S INFORMATION REQUIREMENTS FOR DESTINATION AND TRANSPORT

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1. INTRODUCTION

Distance is relative to the communications channel used and the arrangements, in other words, the infrastructures, that support those channels. You can't fly if there's no airport and you can't speak to someone on the telephone if there is no telecommunications infrastructure. The same point applies to tourism information.

The role of the British Tourist Authority (BTA) is the promotion and marketing of Britain as a tourist destination. Integral to that activity is the provision of information, but that is not just a matter of handing out leaflets. Identifying what information is required, how best to collect, store, process and deliver it are all matters of some complexity.

BTA is relatively good at these things but the real test of a tourist board is how it can use this information infrastructure to achieve its objectives--in BTA's case, increasing the value of overseas visitor traffic to Britain.

Efficient information storage and processing is, of course, a natural role for computer systems and BTA was indeed in the process of establishing an accommodation information database. But, of course, computers were expensive things in those days, so rather than buying one, BTA used a bureau service. The company that provided this service was American, and I can well remember the look of astonishment when the then BTA Director General asked where the computer was and was told "In New Haven, Connecticut". He'd expected us to say "In the basement".

2. DISTANCE IS RELATIVE

Distance is relative to the communications channels used and the supporting infrastructure.

Apart from computers, BTA was also starting to gain experience with a system called Prestel, a videotex service recently invented by what was then the British Post Office. In 1984/5, I ran a project designed to test the use of this system by BTA offices all around the world. We learned that it wasn't easy.

At the same time nobody could fail to notice the march of the airline computer reservation systems, usually known as CRS systems but increasingly these days being called Global Distribution Systems or GDS. In the USA Sabre, was, and still is, the largest system. BTA was the first national tourist office to provide destination information on Sabre.

Above all, we started to look at what the real market characteristics were, and by now we had realised that the delivery of information on its own was an expensive process which no one was very keen on paying for -- and the better you do it, the greater the demand and the more it costs.

So we started to look at what the real market characteristics were. Without going through the whole analysis we took the view that what was really needed was a means of enabling potential customers, all over the world, to purchase British tourism products through any computer terminals anywhere.

3. INFORMATION REQUIREMENTS

So what are "Tourism's Information Requirements" and how do we meet them? Or should we perhaps say, how do we best meet them?

That involves taking into account the various infrastructures that do, and don't exist, and in particular, the business practices that are employed in this very important and rapidly developing industry.

The first characteristic is that tourism is perhaps the ultimate dispersed industry. Tax evasion is probably the only other economic activity that so many different people carry out in so many different places all at once. Tourists, whether businessmen or leisure travelers, come from everywhere and go everywhere. They have even been to the moon.

The second characteristic is that they are channelled: onto aeroplanes, through seaports, along freeways, and only after "arrival" do they disperse. Not always totally, as you can see from the evidence of this very successful destination, but in general, that is the process.

The third characteristic is that for destination purposes, almost everyone's information requirements are unique. You and I have different requirements and priorities. I may need a haircut and a manicure, but I don't particularly want one. However, the lady who will be using my room later this week may well have the availability of hairdressing and other facilities high on her list of priorities. This effects her information requirements and may well effect her choice of hotel.

So even for the same room on two different days, there may be quite differing information requirements. A resort, full of competitors, may produce a brochure or a marketing campaign. However, these competitors will hardly cooperate on providing room availability and rate data, in a way which can, or can be imagined to be, helpful to the other properties within that resort.

When you have a destination such as Britain, with few major resorts but with tens of thousands of individual tourism businesses, and a good transport infrastructure, destination information requirements expand to a quite fearsome degree. At the same time, among the individual businesses involved, the issues of competition, or as I would put it, a reluctance to cooperate for future rather than immediate gains, become very apparent.

The fourth characteristic is that some information requirements are quite separate from the decision to travel and the process of purchase but for any individual customer we can't always predict what information will influence which purchase. This is not as perverse as it may seem. What is an absolute pre-purchase requirement for some people, e.g., the availability of the right accommodation, may be an incidental to another.

There's a fifth characteristic that some of you are probably thinking about right now. "We are all experts in this field." That's a very important point to remember. After all, most people form an opinion about the quality of a guidebook, database or other information source by comparing it against their own knowledge and experience. When it is a destination or service that we know about, most of us reckon that there is quite a lot missing or inaccurate. It's a very good test of information quality.

So, if we have this very disparate and diverse information requirement, what do we find serving it. Print, of course. Brochures, books, magazines and leaflets by the ton. They are very good in their own way, though there are obvious limitations. Print can't handle volatile or rapidly changing information, and it's not very good at initiating transactions other than through that old favorite, the booking form.

But the great drawback of print is that it is expensive to produce and almost impossible to distribute to the right person at the right time (leaving aside the business of what language it should be in).

4. ELECTRONIC SOLUTIONS

Electronic databases and distribution systems theoretically have the perfect answer to this. They can be updated instantly. They can be distributed worldwide, and virtually instantly too. They can be translated, by machines, or interpreted, by operators. The obvious constraints such as data transmission costs and time lags, poor screen displays and diabolical search mechanisms are rapidly being overcome by advances in the technology used.

But the real constraints are data volumes and the commercial issues involved in maintaining and exploiting this data. Let us take a look at the CRS systems and what they do. Their primary, and still most highly developed activity, is to search for and to

deliver airline seat tariff and availability data. Then, to use a quite appalling jargon word, to "decrement" the airline's inventory. In other words, to make a booking.

The databases and computer systems required to support this apparently fairly simple process are truly enormous. Sabre claims to be the world's largest non-government computer installation. European Galileo makes a similar claim for its status in Europe.

Since these airline CRS systems hold some 40-50 million fares, and are able to accommodate several hundred thousand changes to these every day, quite aside from actually taking the bookings, a process which can involve two to three thousand simultaneous system transactions each second, then I suppose it's not surprising that they have to be big.

But what markets are they serving? The strictly controlled, highly automated and very specifically channelled airline network. In volume terms the number of airline seats is tiny compared with the number of tourist facilities and the people who use them.

Recently British Airways ran an imaginative marketing campaign which involved giving away every single seat on all the airplanes and all their routes on one day. A total of 50,000 seats.

That sounds impressive, but most of these seats, were for practical purposes, identical. In data management terms distinguishing between seat A on row 13 on flight BA 161 and seat B on row 14 on flight BA 162 is not too difficult.

In customer perception terms, providing the destination is correct, there is not much difference either. You may remember if you had a window seat or not but I challenge most of you to remember your flight and row number.

If we look at it from a destination information point of view, complete worldwide information provision would create an impossible data management task. In Britain, for example, there are over 50,000 accommodation establishments alone, leaving aside all the associated transport, attractions and events facilities.

The smaller these facilities become the more the possible variations too. Would you like a view of the mountains or over the sea? A cottage with roses round the door and a pub down the road or a city centre boarding house which you won't want to remember and which certainly won't remember you?

No database that exists now, can possibly handle all this in a way which is commercially viable. Nor can the networks handle the volume of inquiry traffic that would be generated. And why should they? After all, networks are there to provide a service

which generates income for their owners and for their users -- usually this means making reservations.

The vendor, that is the airline or the hotel, pays. It pays by giving commission to the travel agent and by paying a fee for each booking to the network. It benefits by obtaining improved distribution of its products and hence increased sales.

But what about the smaller vendor, or the dispersed products that make up the majority of the tourism facilities that most countries possess, and which are very often the most sought after?

There is a very obvious danger that if the big computer networks don't want to handle these products and the vendors can't use the networks for commercial reasons, that much of the world's tourism inventory, particularly of the type and kind that is not only attractive to visitors but also plays an important role in the economic life of the area or region concerned, may become increasingly more, rather than less difficult to purchase.

So what can we do? I'd like to draw a parallel between how we function as individuals and what I regard as a sensible approach to destination information management.

A few moments ago I suggested that few of you could remember the row number you sat in coming here. But I am pretty certain most of you know your room number, and of course, the name of the hotel you are staying in. What we have done is to remember relevant data and exclude irrelevant data.

We have each made a judgement as to what data is necessary. Your flight and row number was important to the airline but only incidental to you. Is it possible to build a link between the features of a destination that are important in marketing terms and the rather rigid technical and commercial parameters that computer systems inevitably impose?

5. A SPECIFIC CASE

Let us take a look at one development in Britain which I believe shows there is a possible way forward, even for relatively remote, dispersed and reasonably priced destinations. The majority of people in Britain live in towns. It is a densely populated country, but in the North there is region known as the Highlands and Islands of Scotland. This region is sparsely populated, scenically attractive and economically fragile.

Tourism is an important element in maintaining a viable local economy and some years ago, the Highlands and Islands Development Board, which actively promotes the region as a tourist destination, established a reservation service known as Hi-line.

The objective of the Hi-line operation was to service the marketing efforts of the Board. In other words, when a potential customer decided to take his holiday in the region, he had one number to call. Experienced staff using a sophisticated computer system would then match his requirements to availability and effect the booking.

Nevertheless, after early difficulties, the Hi-line operation is now an established fact of life. Though still closely linked with the Highland and Islands Development Board it is an independent company with its own shareholders. Working with its system supplier, Infocentre, it has developed an effective information and transaction processing system which serves the commercial requirements of its customers.

Who are its customers? They are both the people who book the products Hi-line sells, and the hotels and other vendors who contract with Hi-line to provide those products. To succeed Hi-line has to satisfy both.

The first set of customers are mostly the public, mainly using the telephone, who inquire about product suitability and availability. They are handled by experienced staff who use the Hi-line database system to provide not only comprehensive destination and product information but also to process necessary transactions and associated administration. These customers normally pay Hi-line in advance of their travel.

The second set of customers, the vendors, have to pay Hi-line a commission, now set at 15%. In return, they receive business from customers that they would not have achieved through their own efforts, as well as advance payment (less Hi-lines's commission) on a regular, indeed sometimes daily, basis.

What are the parallels with how we ourselves handle information in our own minds. Firstly, the system is economical. It only holds relevant data and is only used by a few people at a time.

Secondly, it is based on years of experience of what is required in real terms, and serves its customers' requirements, rather than trying to make the customers serve the system's requirements.

Thirdly, it is operated by human beings who know what they are doing. That may seem a stupidly obvious comment but it is a point that is all too often forgotten by proponents of giant computer networks which claim to provide complete information facilities as well as booking services. In practice these systems can rarely ever achieve their full potential.

One reason for this is human nature. The number of different command and control procedures, for want of a better word, that we each have to remember as we run our daily lives, is colossal. From the humble alarm clock, through the controls on video

recorders, calculators, telephones, answerphones and fax machines before we even begin to think of computer systems. I'm told that 75% of video recorders in Britain have a series of little noughts flashing where the time should be showing -- their owners don't know or can't remember how to set the time on them.

So what hope is there of persuading the public, or even the travel agent, to learn to control databases which they would only use infrequently at best? None at all, I would suggest.

Of course there is probably a system solution. But not until the value of bookings that such a solution would generate would pay for its cost. And no one can forecast when that will come about.

6. SUMMARY

The secret of success: keep it simple. Use telecommunications for what they are good at. Voice transmission is an extremely effective interactive booking system. Facsimile is a virtually instantaneous confirmation mechanism that can handle both machine held data and your and my handwriting.

Develop databases that are product specific and serve a real need. Use an experienced system supplier who can provide a powerful off-the-shelf engine which can be easily adapted to suit your own special requirements.

Have the operation managed by people who understand what business they are in, in other words, those who are committed to customer service. Identify your target markets and match your information services to the market requirements.

Beware of the salesman who doesn't understand your business but promises his solution will be just what you need. And if you are ever in any doubt, work through a typical transaction or an information request, step by step. You'll soon find the problems.

STRATEGIC DEVELOPMENTS

STRATEGIC DEVELOPMENTS

As telecommunication network infrastructures support the offering of an expanding array of information services for tourism and travel, strategic planning becomes both possible and necessary. The first two of the five papers in this section are at the country level: New Zealand and Korea. The next paper discusses teleports in remote resorts which is followed by a survey of ASEAN communication policies at the interface of telecommunications and travel. The final paper proposes a novel Travel Information Platform as part of a network based strategy.

In his discussion of the entwined role of telecommunications and tourism in national development, Talbot begins with a review of international tourism before describing the special situation of New Zealand. For instance, the international travel industry now employs some 112 million people, 48 million of whom are in the Asia Pacific Region. Talbot asserts that New Zealand's development will be greatly influenced by access to the "great global computerized databases." The problem is particularly acute because New Zealand's tourist attractions, many of which are small, are often excluded from the international reservation systems. The current goal is for seventy-five percent of the New Zealand rooms having access to global networks to ensure "good marketing." Attention to the role of telecommunications and tourism in national development, the author concludes, can help attain a better and more peaceful world with greater economic opportunity not only in New Zealand but throughout the Region.

The paper by Hyun that follows next describes in strategic terms the role of tourism in the nation economy of Korea. The paper discusses inbound tourism first, indicating that spending by foreign visitors accounts for about two percent of Korean GNP. Outbound tourism, which has only recently been permitted, shows rapid growth, exceeding one million travelers in 1989. In Korea, as also noted elsewhere in these papers, "As national income goes up, the demand for travel abroad increases." Thus, for Korea both inbound and outbound travel for tourism are increasing rapidly; this fact is substantiated by a body of empirical evidence.

The next paper is another in a series of reports from the Triple T Project, presented by Saga; this particular paper focuses on teleports for developing economies, with attention to the interconnections among transportation, telecommunications and tourism. A teleport is an access facility to satellite and other distance technology in a specially developed piece of "real estate," which could be a tourist resort. The paper includes two contrasting teleports, and describes next stages in an ongoing study.

In the paper by Hukill, trends toward deregulation, privatization and private participation in telecommunications of five of the

six ASEAN countries are explored in the context of implications of these trends for the tourism industry. The dependence of the tourism industry on the use of innovative telecommunications technology for strategic growth means that countries which prioritize tourism as a growth industry must also make the concomitant changes in telecommunication policy toward more open markets for equipment and services provision. In addition, an increase in private participation in the development of the telecommunication infrastructure is seen as a necessary step in meeting the needs of industries such as tourism.

The concluding paper by Gilbert and Wilson asks pointedly: "What is a network strategy?" Does it react to external forces governing competition, cooperation, and regulation, or alter basic relationships between enterprises? Do constellations of small firms channeling materials and services through a central hub mean that network-based strategy can be "learned?" Or is any telecommunications based strategy simply a fashion industry? Obviously some new partnerships will last while others will not. That said the authors focus on the creation and maintenance of lasting strategic networks in the travel industry. In their view, the key concept is: mutual trust.

As will be evident, the five papers that follow approach the question of strategy from very different perspectives: national, project, regional, and industry.

L.S. Harms

THE ROLE OF TELECOMMUNICATIONS AND TOURISM IN THE NATIONAL DEVELOPMENT PROCESS: PROMISES AND PITFALLS

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1. INTRODUCTION

The early 1980s was a time when tourism began to be recognized in New Zealand as the industry with an economic growth potential, even greater than our traditional farming industries -- as we moved towards the 1990s and the year 2000.

It was a time when new targets were set for visitor arrivals from overseas. In 1984, we achieved the figure of half million visitor arrivals. This has now doubled as projected to one million arrivals in 1991.

Following the success of that projection, the tourism industry is now targeting, and speculating on a possible three million arrivals by the year 2000.

At the same time during the early 1980s, as Minister of Telecommunications, I found myself making long term decisions on the selection, the purchase and putting in place of a new generation of telecommunication technologies, with the responsibility of ensuring that those systems would keep New Zealand to the forefront in the economic development of international communications of which the instantaneous transfer of information for travel and tourism was to become an increasingly important element.

The early 1980s were indeed years of decision and great promise -- the installation of digital switching systems, fibre optical cables, of facsimiles and decisions on cell-hone systems -- all of which have now proven to be the foundation for the electronic databases and computerised reservations systems of the 1990s.

From this background as to from where we have come in the last ten years to where we are going in the next ten -- and in considering the future promises and pitfalls of telecommunications and tourism in the National Development Process, let us now consider the following:

2. THE CHANGING ROLE OF TOURISM IN INTERNATIONAL RELATIONS IN THE NATIONAL DEVELOPMENT PROCESS.

It is important to highlight the dramatic growth and economic impact of international tourism as a background to priorities for the future. The industry now employs 112 million people or 1 in 15 worldwide, 48 million of them in the Asia Pacific area. Industry employment is forecast to rise to 130 million or 1 in 14

by 1992--a growth rate that is more than twice the world job increase.

I highlight these facts at a time when governments and politicians concerned with the world economy are focusing on such things as employment, balance of payments and redevelopment.

Facts such as these have to be stated again and again to contrast the reality with the popular misperception that tourism is a small business issue, both nationally and internationally.

The immediate challenge is to change those perceptions if we want to get the right kind of attention from policy makers for the world's greatest growth industries -- telecommunications, and tourism -- the kind of attention farmers get in Europe, automakers get in the US or extractive industries get in Australia.

The dramatic growth of international tourism has been paralleled at the same time by the increasing globalisation of communications and financial services to the extent that many of the old traditional obstacles experienced at international frontiers are being dismantled, due almost entirely to new technologies.

As well as the globalisation of computer reservation systems, significant country to country deregulation has occurred in many areas. Not only are visa requirements being progressively abolished, but the powerful financial restrictions from country to country have, in many cases, all but disappeared (New Zealand being a case in point). Through the use of international credit cards and deregulated money transfers -- the point has been reached where the whole economic infrastructure of the modern world would grind to a halt if the clock was put back 10 years.

Concurrently, we have witnessed the emergence of mass international travel and tourism with 400 million people travelling from country to country annually.

Both developed nations and developing nations and their policy makers must recognise as a matter for urgent attention, the following facts:

- As international relations has moved away from a narrow focus on relations among and between nations, and a concern with political power towards an examination of interaction of institutions, as well as super-national organisations, so too, has the field of international tourism diverged.

- Growth in technological (especially telecommunications) and financial (especially banking and credit) services has been non-committal with growth in Government recognition of tourism as a multi-disciplinary phenomenon. This awareness has transformed the conception of international tourism from

simply the single leading item in international trade, into a multi-faceted process of information gathering and retrieval.

- Tourism has become a complex global process in the high speed movement and management of data and capital as well as of literally millions of individuals.

- Another result has been a changing conception of the tourist, and especially the frequent traveller from an individualised commodity to a highly sophisticated, integrated consumer factor in the international political economy.

- Today's frequent traveller represents a means of achieving a number of highly important, strategic international business, financial and policy objectives, both at Government and non-Government level.

Those five statements contain, what I believe are, some of the core issues which must be considered by all Governments on a national basis and by their policy makers.

Furthermore, it has become extremely difficult to assess the impact of one sector of tourism on another without taking into account the complexity of the entire system and its integrative nature. Until there is a better understanding of this process (by Governments and their advisers) important political economic and cultural decisions at the policy level will continue to be based largely on "conventional wisdom" with tremendous opportunity to both investors and clients.

These are the messages of urgent economic and social importance which must be rammed home to national policy makers from New Zealand, Indonesia, the Americas and all points in between. To avoid the pitfalls of progress, there can be no delay. In New Zealand, we are about to announce a new Tourism Marketing Board -- destined to be the most powerful Marketing Board in the development of New Zealand's Economic and Social Future.

The new Tourism Board and tourism marketers in our beautiful and unique country will be required to take new initiatives to convince our Government to work with policy makers to tackle many unanswered questions in association and in cooperation with all our tourist trade partners, some of which have been so well set out by Hamid Mowlana, Professor of International Relations, and Ginger Smith, the American University, Washington, D.C.

- What is the global telecommunications electronic market as it relates to international tourism?

- What is the role of Government policies both national and international in this market?

- What does a global communications market imply in terms of proprietary protocols and standards in the tourism infrastructure?

- What are the roles of international organisations as forums in which to address barriers to international trade in tourism telecommunications and other services?

- What implications does the complexity of the tourism infrastructure have for international and national development goals?

If we can convince the New Zealand Government's advisers in the New Zealand Treasury to tackle those dynamic questions for in-depth research, I am confident the answers will be awe inspiring and of immediate and long term significance in our national development process.

Hamid Mowlana and Ginger Smith have come up with the following recommendations which would turn these questions into concrete subjects for study and action in international tourism:

- Airline Computer Reservation Systems should be examined at the international relations policy level as vehicles for technology transfer to newly industrialising nations in the 1990s and the 21st century.

- The movement of major transnational banks and non-banks into credit card issuing and credit card loan management should be studied as a critical connection between telecommunications technologies, particularly airline CRS, and trans-national banking, since this relationship constitutes a new era of research in the International Relations policy field.

- An important new unit of analysis for integrative tourism research -- in the face of converging CRS technology and trans-national credit card issuing and loan management -- is the frequent (and primarily) business traveller. Because of the profit incentive for those corporations and institutions compiling them, frequent traveller statistics should be reliable and accessible and the design of future tourism research should include comparative and integrative cross-sector analyses of frequent traveller for a better understanding of tourism in international relations.

- The role of international institutions (such as PATA, WTTC, GATT) and transnational corporations (American Express, AT&T) should be studied as facilitators in policy level considerations of tourism as international relations.

Those recommendations, if recognised nationally and internationally, hold great promise.

The Gulf war is behind us -- the international telecommunications, the international banking barriers and international borders are collapsing around us. The message which must come from this forum and every other similar international forum must be - **act now**.

That message must go out clearly to all Governments -- in this age of international de-regulation. Governments must respond to the new responsibilities which have emerged -- to ensure well balanced access for all sectors of tourism to the present and emerging telecommunication systems.

In our own region of the world we have the international institution of the Pacific Asia Travel Association (PATA) with 16,000 members in the greater Pacific region and worldwide. PATA's "Direction 2000" plan encompasses the vision that PATA be the leader of and authority on Pacific-Asia Travel and Tourism. That vision must now become a reality providing strategic leadership and authoritative advice up to Government level, on the issues of telecommunications and tourism. Yes, the basic telecommunications tools and basic infra-structure is in place, but the tools have still to be correctly utilised.

3. THE MESSAGE FROM NEW ZEALAND

The pace of New Zealand's national development, with tourism now our most important income earner, now depends very heavily on how quickly we are permitted to use the great global computerised databases. New Zealand is a prime example of a highly developed country of 3.3 million people whose future international marketing ability will depend very largely on our ability to satisfactorily hook into the world's mega computer reservations systems as they develop still further.

Our tourism industry is a special case in that we have a very wide range of tourist attractions and travel related attractions owned and operated by large and small companies.

New Zealand is, therefore, as good an example as any in the world of what needs to be done -- and of the importance of having a Government which is prepared to give a lead in what is arguably one of the most highly de-regulated economies in the world.

With New Zealand having that present day economic background, one must again ask -- what is the role of National Tourist Organisations and Governments in the role of Telecommunication and Tourism in the National Development Process? In simplistic practical terms -- should Governments and National Tourist Organisations be giving a lead in this deregulated age as to who should be able to plug into the emerging global electronic data bases and computerised reservation systems?

In answering that question, let us first consider what is happening in the hotel/accommodation sector, without which there

would be no tourism industry -- no resorts -- no opportunity for travel in the modern context.

In the world today, according to World Tourism Organisation (WTO) figures, there are 12 million plus hotel and motel rooms available to accommodate travellers -- of which 40,000 are in New Zealand -- that is just 0.32 percent of the world total.

The next question to be asked must be: How many of these are going to be plugged into the now developing global networks?

In New Zealand, we would aim at having 75 percent of our rooms having access to global networks to ensure a good marketing thrust.

The onward march of major computer reservation systems in the hotel industry could well place at a disadvantage the small hotel, the small travel agent and the small hotel representatives who are scattered around the industry.

Is it not a fact that only those capable of financing the investment required will be able to tap into the new computer reservation systems, and the bigger you are, the greater the potential winnings from this new technology will be?

In the longer term, consumers may well get better and better access to electronic databases through their own on-line intelligent work stations, and may begin to by-pass agencies and booking services altogether.

The same will be increasingly true for major corporate travel departments which may begin to place more reservations themselves. The small operators, and especially the independent hotels, may be faced with a stark choice. Either they band together in a co-operative defence or attack on the big guns in the industry or they lose much of their ability to market themselves widely and internationally.

Right now, many have not woken up to the stark reality that technology may, in fact, be overtaking them.

With this scenario developing rapidly -- month by month -- as the global giants negotiate new contracts on better access for industry leaders, into new and streamlined global systems, is it any wonder that those of us involved in developing the total tourism resources and unique attractions of countries such as New Zealand, are saying - wait a minute! What actually is happening? Are the new mega systems going to allow for well balanced tourism growth through market availability for the smaller attractive hotel and resort operators?

Maybe market forces will permit this, but it would be irresponsible not to ask the question with the aim of obtaining an objective answer.

New Zealand, with tourism now the first ranked foreign exchange earner, needs total access to global systems if we are to continue to develop our unique and diversified attractions which have so much appeal in an environmentally concerned world.

In giving attention to this subject, we should remember it is the smaller operators, the smaller attractions, the lodges and resorts which add that special quality to most countries' tourist attractions.

The quality of a country's tourism attractions can be compared with that of a country's wine industry. It is the boutique wines from the smaller companies that provide the character and personality that is so important to the total industry and also to the success of big operators.

In New Zealand, we have the big and small in both tourism attractions and wonderful wines. We want to retain that balance in the new age of mega systems and mega bucks.

With the objective of developing and marketing New Zealand's diverse and unique tourist product, our National Tourist Office in the early 1980s established a comprehensive computerised information base now called NZ Host. New Zealand has, in effect, a database containing 75-80% of New Zealand tourism product, being used by many sectors of the travel industry.

I understand that Indonesia has also developed and is expanding a similar database along similar lines as New Zealand.

In the development and decision making which should now be taking place, the concept of the NZ Host tourist industry database can be described as a significant marketing tool in that it puts before the industry salesperson and the consumer, the total New Zealand product, from the large wholesalers and hotels, to the small or boutique resort, lodges and attractions that make up the total tourist package.

Is this not a prime example of the responsibility of the National Tourist Office or Marketing Board -- encouraged by Government, in the interest of tourism and the economic spin-offs which are generated?

In the deregulated world of the 1990s, that is one practical way in which countries such as New Zealand can put tourism at the forefront of economic activity and planning.

NZ Host computerised database can directly support the goal of increased sales of products. NZ Host can be a sales tool if the product on the database is reservable on line, with every NZ Host site becoming a point of sale for the New Zealand product.

The promise of such an opportunity to access the world mega systems is still fraught by the fact that the western world has essentially been divided between two large global reservations systems and their affiliates -- Galileo and Sabre -- with a maze of complicated negotiations to be unravelled before anything like uncomplicated access is available -- and at an affordable price.

At the same time, the operations of the global computerised reservation systems in the USA and Europe have led to some trends that are ominous for the New Zealand industry which, although highly developed with a unique world product -- has a present marketing disadvantage of being generally small scale by international standards. On the international scene we are witnessing increasing pressures of uniformity of the tourist product, higher commissions charges, with smaller operators being swallowed by big ones or put out of business, thereby causing an on-going deterioration of the tourism physical plant.

New Zealand, therefore, signals the pitfalls which could overcome the balanced development of the world's greatest growth industry, if we do not heed the danger signals which must be given at this critical time as we continue to race ahead in the somewhat uncoordinated installation of new computerised reservation systems.

In order to encourage the balance growth of New Zealand tourism and to reverse or stabilise the trend towards "big brother" tourism and travel, we envisage the development of the ideal travel industry information system with the NZ product database (NZ Host) having direct access to National and International Networks and from that to global computerised reservations systems on one hand, and on the other to NZ travel agents, wholesalers, NZ visitor centres, wholesalers and travel agents offshore, and principals of companies registered in the database.

The proposal is the only feasible method at this time of integrating to on-line points of sale a significant proportion of the New Zealand tourist product through the emerging global networks. Anything less will mean New Zealand will be undersold on the international scene with our nation's economic goals remaining unachieved.

The New Zealand example I have put before you may not be applicable to all national economies but I believe it does highlight in a significant way to avoid the pitfalls which exist right now, as we look to the exciting promises of the next decade.

4. CONCLUSION

If nations and their governments take on board the role of telecommunications and tourism in the national development as outlined in this paper, we will have travelled a long way towards

attaining a better world, a more peaceful world and a world with greater economic opportunity for the people of the world.

We should remember that the first time telecommunications and a computer were used outside the military, was back in the sixties for travel and tourism when American Airlines created the first computerised reservation system.

Now in 1991 -- less than 30 years later -- you and I, and everyone in any position in tourism and travel, PATA to GATT, from Prime Ministers to Office Managers, has a responsibility to ensure that the pitfalls to progress do not overcome the promises of the future.

The age of deregulation has, in fact, placed added responsibilities on our governments and national tourist offices. The promises and pitfalls of tourism and telecommunications must be resolved at the highest level, on the national scene, bringing together our individual policy makers on international relations in the knowledge that people movement through telecommunications and tourism has created a new age for mankind through the breaking down of traditional international border controls, of finance, money movement and international investment.

By resolving the problems of the present, we will be better prepared for the biggest advances yet, moving towards the global communication network that will operate through fibre-optic cables carrying gigabytes of data, voice, fax, telex, telephone, video and messaging to semi-intelligent user hardware, available to the individual, using three dimensional chips architecture and light controlled switching systems, that will eventually put a database on the wrist of the man in the street.

THE ROLE OF TOURISM IN THE NATIONAL ECONOMY IN KOREA

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1. INTRODUCTION

Korea has an increasing trend in in-bound tourism from all around the world, and has been recognized as an attractive place for international tourists. The Seoul International Olympics in 1988 was an important event to the Korean people, and was executed successfully. As a result, more people visited Korea from all around the world. More than 2 million foreign visitors came to Korea in 1988 as well as in 1989. The tourism industry plays an important role in national growth. Moreover, the tourism industry is being recognized as an important business to obtain foreign currencies. Total spending by foreign visitors have increased each year. The most significant increase in spending occurred following the Seoul International Olympics in 1988.

During the 1960's and 1970's, economic development was recognized as the most important objective of a government. Exportation was viewed as the only way to achieve this national goal, and importation was discouraged. This philosophy was also applied to the tourism industry in Korea. Inbound tourism was highly supported by the Korean government as exemplified by the establishment of a government organization to promote the level of inbound tourism and provide tax breaks for the tourism industry. They recognized that elevation of inbound tourism was a good method of increasing the influx of foreign currencies. Outbound tourism was recognized as a national loss, and was not allowed by the government until the late 1980's. As Korea was successful in achieving economic development in the 1980's, the Korean people began to demand outbound tourism. The government began to loosen legal restriction of outbound tourism.

The purpose of this research is to examine the role of tourism in Korea's national economy. For this study, the tourism sector is divided into two parts: inbound tourism, and outbound tourism. This paper consists of three sections. First, we analyze the role of inbound tourism in Korea's national economy. Second, we examine the role of outbound tourism in Korea's national economy. Third, we draw conclusions from our research and summarize our empirical findings about the role of tourism in Korea's national economy.

2. INBOUND TOURISM AND NATIONAL ECONOMY

The tourism industry plays a very important role in national growth. Total spending by foreign visitors account for about 2% of the GNP. More importantly, this proportion has increased over time.

We also determined the ratio of total spending by foreign visitors to income due to exporting goods. Again, we find an increasing ratio over time. These data imply that the tourism industry became relatively important after 1979.

We examine the ratio of total spending by foreign visitors to GNP to measure the importance of travel expenditures by foreign tourists in national economy. It was just 0.61% in 1980. However, this ratio has been increased every year. Total spending by foreign visitors reached 1.93% of GNP in 1988 and 1.69% in 1989. Thus, as GNP goes up by one unit, total spending by foreign visitors is increased by 1.19 units. This estimate shows that total spending by foreign visitors is elastic with respect to GNP.

Most tourists visit countries that are well known for their natural beauty, tourism facilities, culture, etc. The total number of tourists who visit a country can be predicted by the level of attractiveness that each country has. However, it is difficult to measure this level of attraction by using a single index. It might be possible to measure this information using a proxy variable, such as GNP per capita. Typically, a country that has a higher GNP per capita has more foreign visitors than a country that has a lower GNP per capita. We estimated the impact of GNP per capita on the level of inbound tourism in Korea. We used two different variables to represent the level of inbound tourism in Korea: (1) total number of foreign visitors, and (2) total spending by foreign visitors. We estimated two semi-log functional forms using these two variables with GNP per capita as an independent variable.

For the first estimate, the estimated coefficient of the independent variable, GNP per capita, is statistically significant. This implies that, when GNP per capita is increased by $10, the number of foreign visitors is increased by 2%.

For the second estimate, the estimate (0.0001) of the coefficient of the independent variable, GNP PER CAPITA, is statically significant. It implies that when GNP per capita is increased by $100, spending by foreign visitors is increased by 1%.

3. OUTBOUND TOURISM AND THE NATIONAL ECONOMY

Outbound tourism was not allowed by the government until the late 1980's. However, the government recognized that outbound tourism provided an opportunity for the travellers to become well educated and well informed about the world. Outbound tourism results in a national loss in monetary terms, however, it can be helpful in the long run because information gained by travel can be helpful in developing strategies for increasing the productivity of Korean enterprises. Therefore, in 1989, the Korean people were allowed to travel outward without any restrictions by the government.

The level of outbound tourism can be measured by using two indicators. One is the total number of travellers who go abroad for tourism. The other is the total travel expenditures spent by the Korean people. We find that the total number of outbound travellers from Korea can be divided into three groups based on number and time period during which the travelling occurred. The first period is 1970-1982, which shows a constant increasing rate in outbound tourism. The second period is 1983-1987, which shows almost no increase in outbound tourism. This is especially marked in 1989, when there was no restriction of outbound tourism. Total number of travellers reached more than one million persons (1,213,112), and shows the highest rate of increase over time.

The overall pattern of total travel expenditures from 1970-1989, displays a slightly increasing trend over time. After 1983, the pattern of total travel expenditures is similar to that of total travellers. From 1983-1987, there was almost no change in total travel expenditures. However, there is a dramatic increase in the rate of total travel expenditures in 1988, and the highest increase in rate in 1989, amounting to 2,593 million dollars. From these patterns of total number of travellers and total travel expenditures, we obviously expect that the level of outbound tourism will be highly increased during the next several years.

As national income goes up, the demand for travel abroad increases. To analyze the exact relationship between national income and the level of outbound tourism, we use GNP for national income, and total number of travellers as well as total travel expenditures for the level of outbound tourism. As GNP is increased by one unit, total travellers abroad are increased by 2.29 units. Thus we find that GNP elasticity for total travellers is much higher than 1, which indicates that outbound tourism is a highly elastic good.

Another variable used to indicate the level of outbound tourism is total travel expenditures. As GNP goes up by one unit, total travel expenditures are increased by 1.75 units. This estimate, which is higher than one unit, shows that total travel expenditures are elastic with respect to GNP.

Comparing these two values of GNP elasticity, we find that the total number of travellers going abroad is increased much more than the total travel expenditures, as GNP goes up. Moreover, we expect that total travellers as well as total travel expenditures will be dramatically increased over time. We examine the ratio of travel expenditures to GNP to find the role of travel expenditures in national economy. It was 0.58% in 1980. However, this ratio generally has been increased every year. It reaches the highest ratio (1.23%) in 1989.

4. CONCLUSIONS AND SUMMARY

Korea has an increasing trend in inbound tourism as well as in outbound tourism. Travel expenditures by foreign visitors are being recognized as an important business to obtain foreign currencies. The most significant increase in spending occurred following the Seoul International Olympics in 1988.

Outbound tourism was recognized as a national loss, and was not allowed by the government until the late 1980's. As Korea was successful in achieving economic development in the 1980's, the Korean people began to demand outbound tourism. In 1989, the Korean people were allowed to travel outward without any restriction by the government. This study shows the role of inbound tourism and outbound tourism in Korea in national economy. The empirical evidence can be summarized as follows:

- The amount of the GNP generated by total spending by foreign visitors is increasing with time. Also, the ratio of total spending by foreign visitors to GNP is increasing. This ratio reaches 1.69% in 1989.

- The GNP elasticity for total spending by foreign visitors is 1.19, which shows that total spending by foreign visitors is elastic with respect to GNP.

- When GNP per capita is increased by $10, the number of foreign visitors is increased by 2% and spending by foreign visitors is increased by 0.1%.

- The elasticity of GNP with respect to total number of travellers to go abroad is 2.29, which is highly elastic. The GNP elasticity for foreign travel expenditures by Korean people is 1.75.

- The ratio of foreign travel expenditures by Korean people to GNP shows much fluctuation over the time. This ratio reaches the highest value of 1.23% in 1989.

THE TRIPLE T (PORT) FOR DEVELOPING ECONOMIES

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1. BEYOND THE REVOLUTIONS IN TRANSPORTATION, TELECOMMUNICATIONS AND TOURISM

Triple T stands for transportation, telecommunications, and tourism. We define transportation as the flow of goods, telecommunications as the flow of information, and tourism as the flow of people generally. The Triple T Project is uniquely situated to analyze not only each T individually, but also the three Ts' synergistic effect.

Technological progress in the fields of transportation, telecommunications and tourism has brought about accelerating global growths in the flows of people, goods, information, money and technologies.

The distance revolution is changing our concept of geographical space. Satellite technology has given us the ability to communicate instantaneously between any two locations in the world, and the introduction of communications satellites and optical-fiber cables has led to major improvements in the capacity and quality of telecommunications systems. These developments have provided simultaneous access to information and eliminated the time factor from the flow of information.

Moreover, with the worldwide trend toward the liberalization of telecommunications, the diversification of telecommunications services and the reduction of telecommunications costs are now becoming a reality.

The appearance of giant tankers and container vessels has reduced transportation costs in the Pacific and technological advances in aviation have drastically reduced travel time. Currently, the jumbo jet flies at Mach 0.85, and the Concorde at Mach 2.03. But the next generation of supersonic aircraft, expected about the beginning of the next century, will travel at speeds between Mach 2.5~5.0, reducing the traveling time between Tokyo and New York or Tokyo and Sydney to just three or four hours.

With the introduction of jumbo jet aircraft in the 1970s, there was a massive increase in the flow of people. Already within this decade, rising income levels in the developing economies and our evolution into a borderless society are contributing to the growth rates of the international flow of people, which are projected to increase dramatically. After the year 2000, the introduction of the new supersonic aircraft is likely to trigger another acceleration in the growth in travel on a scale without precedent.

To solve the problems caused by the lack of Triple T infrastructure, the PECC Triple T Task Force decided to proceed with the Triple-T Port (Teleport) Project. We use the name "Triple-T Port (Teleport)" to emphasize the nature of the Triple-T, and the integration of the flows of people, goods and information. Since the concept and name "Triple-T Port," created by us, are of course, not yet widely recognized, we have added the word 'Teleport' in consideration of the fact that a lack of adequate telecommunications infrastructure is a major problem to be faced.

The Japan National Committee for Pacific Economic Cooperation (JANCPEC) formed a project team for the Triple T Port (Teleport) project and nominated me as the leader. Our project team decided to conduct an investigation into the state of infrastructure in industrial parks in each ASEAN member country, and at the end of last year, we visited Indonesia, Malaysia and Thailand. I would like to summarize for you our findings to date regarding the potential of the Triple-T Port (Teleport).

2. THE CONCEPT OF THE TRIPLE-T PORT

To illustrate the new concept of the Triple T Port, we formulated two conceptual diagrams, Concept A and Concept B. According to Concept A, shown here in Figure 1, the Triple-T Port Project organizes Triple-T infrastructure. Here, the construction of housing, seaports, airports, teleports, and resort areas will become part of the Triple-T Port project.

Such a development project requires vast amounts of capital investment and time, therefore limiting the areas where it can be carried out.

So, we then developed Concept B, also shown in Figure 1. Here, a teleport is included in the Triple-T Port Project with effective access (roads, railways, etc.) to residential areas, seaports, airports and resort areas ensured. With the introduction of this concept, the possibility of constructing Triple-T Ports can be extended to many of the existing or planned industrial parks.

We conducted our fact-finding investigation bearing these two concepts in mind. Our investigation revealed that various types of industrial park development plans exist in the developing economies, each requiring a Triple-T Port suited to the prevailing conditions.

In addition to the individual impact of each "T", we must develop a clear understanding and awareness of the effects of the integration of these sectors. We describe the effect of the integration of three Ts by using the term "Triple T Revolution."

The Triple T once existed as separate elements. Gradually, all three of these elements overlapped, with the area of interaction among all three growing progressively larger. The overlapped part signifies the concept of Triple T Revolution. During the 21st century, the Triple T will be virtually integrated and the Triple T Revolution will create a new synergy having beneficial effects for all of society.

The Triple T has already dramatically affected our lifestyles, bringing to us many conveniences and riches.

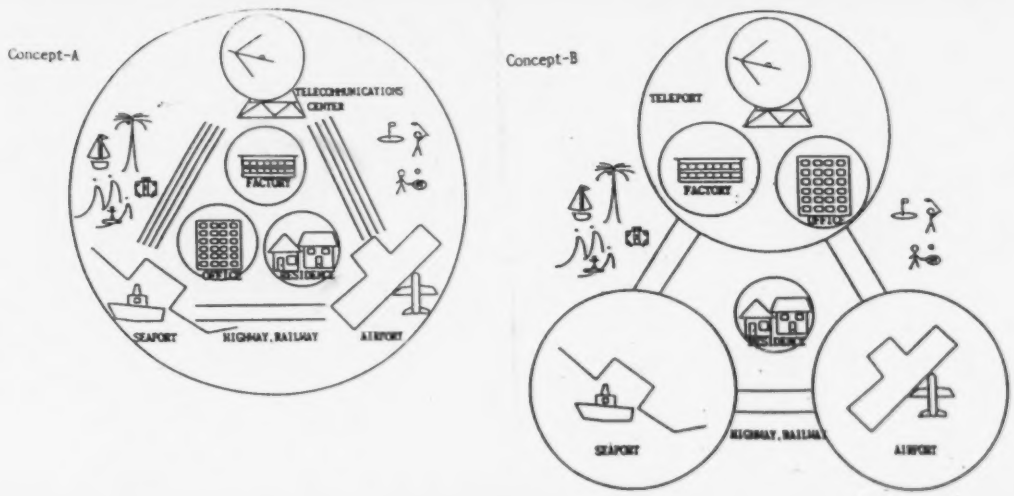
The globalization of business management will accelerate, opening up new frontiers of product activity and increasing the business sector's power to stimulate economic growth.

As the distance revolution expands our "life-space" conspicuously, it will increase the variety of people that we meet. As our experience with other cultures broadens, those cultures become part of our everyday lives. This process will lead us into an era of coexistence, meaning increasingly we will live in multi-cultural societies. The Triple T is bringing about new changes at the economic, social, cultural and lifestyle levels, and also generating new wealth (welfare and equality) for us.

We live in a time when the development of transportation, telecommunications and tourism is triggering the "Triple T Revolution," forcing us during this decade to become more aware of its effects. The revolution will continue to develop at an accelerating pace, and by the turn of the century, it will be widespread with new industrial and social systems evident around us.

The advance of the "Triple-T Revolution" further increases the importance of the Triple-T networks. As an example to demonstrate the importance of the Triple T networks, consider that we find many industrial park projects in the developing economies of the Asia-Pacific region. The term "industrial park projects" includes EPZ (Export Processing Zones), FTZ (Free Trade Zones), Bonded Zones, new economic special zones, and so on. These projects foster industries that earn foreign exchange with the primary purpose of achieving economic development. Yet, such developing economies lack basic infrastructure --telecommunications, roads, airports, and seaports -- and this is creating a bottleneck for development projects.

FIGURE 1: CONCEPTUAL DIAGRAMS OF TRIPLE T PORT



Singapore is an example of the Triple-T Port shown in Concept A. Singapore, an island with an area of 617 km_2 and a population of 2,600,000, is equipped with the world's largest harbor and a modern airport. In the field of telecommunications, a high quality local network exists, and international telecommunications facilities are provided by groups of earth stations with access to INTELSAT satellites above the Indian and Pacific Oceans. Numerous submarine cables have been brought onto land resulting in effective and moreover, advanced, telecommunications services. Singapore has the entire Triple-T Port infrastructure, and it may thus could be called an ideal model of Triple-T Port. Hong Kong might be called another model of a Triple-T Port.

Of the industrial park projects we investigated, the Batam Island Development Project in Indonesia is an example of this type. The Batam Island Development Project contains plans for a harbor and airport, but none for the construction of a teleport at this stage. If however, a teleport is included, this could become a Triple-T Port plan fulfilling the concept described in Concept A.

The Labuan Island Development Project (Offshore Financial Center) in Malaysia can also be said to fit this concept.

An example of the Triple-T Port indicated in Concept B is provided by the joint CAT/TOT Teleport Project that covers the eastern seaboard of Thailand. According to this plan, an international switchboard will be located in the satellite telecommunications center of CAT in Sriracha and will then be linked to the telecommunications centers to be built in Laem

Chabang and map Ta Phut Industrial Estates. A local network will be constructed in both estates with optical fiber cables as its main links.

Examples of plans to construct other types of infrastructure apart from that for telecommunications include the:

- Construction of a deep-sea port at Laem Chabang Industrial Estate, Map Ta Phut Port and the existing Sattahip Port;
- Conversion of U-Tapao Airport to an international airports; and
- Construction of express highways and railroads from Bangkok to Map Ta Phut via Laem Chabang, and 'new town' housing areas.

The well-known tourist resort Pattaya lies between Laem Chabang and Ma Ta Phut, and the Pattaya Development Project will also commence operation. These projects are all government-sponsored, but several private industrial parks are already in existence or under construction in the area of the eastern seaboard, including the Sriracha Industrial Park.

If these Triple-T infrastructures are completed and access achieved, the role of these private industrial parks will be greatly expanded; and it could then be said that a Triple-T Port covers the eastern seaboard of Thailand.

As a result, we feel that, for the Triple-T Port concept to become widely accepted, it should include both of the concepts described above.

Two important characteristics emerged from our fact-finding investigation:

First, the majority of existing or proposed industrial parks have plans to provide infrastructure to ensure access to harbors and airports; however, telecommunications infrastructure is either lacking or, where it exists, is considerably limited.

Second, construction plans for teleports were found only in Thailand--yet, great interest was shown in the teleport in most of the countries we visited.

Considering these two points, the following should be taken into account concerning the construction of teleports in industrial parks in developing economies:

3. FUNDAMENTAL ASPECTS OF TELEPORT PROJECTS IN DEVELOPING ECONOMIES

In the early 1980s, the teleport concept was first embodied in the plan to construct the world's first teleport in New York City. The aim of the Teleport was to revitalize New York City by equipping the city with an advanced telecommunications function. Local officials wanted to prevent the leading corporations from transferring their head offices out of the city with its growing number of problems and high expenses.

A teleport is defined in the constitution of the World Teleport Association as "an access facility to a satellite or other long-haul telecommunications medium incorporating a comprehensive related real estate economic development project and a distribution network serving the greater regional community (beyond the tenants of that industrial real estate)."

More than 50 teleport projects exist throughout the world at present, and of these, more than 10 are actually in operation. Teleports are found in London, Tokyo, and Osaka, as well as in New York, with the majority located in the metropolitan areas of developed economies, and are undertaken as part of city redevelopment projects or plans for new industrial locations. The World Teleport Association has indicated, however, that "to develop methods to enhance opportunities for teleports in developing countries" is one of its objects and the actualization of teleports in developing countries is expected.

Our project team conferred many times, focusing on this point. We concluded that developing economies that build teleports must take into account the differences between their construction and that of existing teleports in developed economies. These comparisons include:

3.1 Such teleports must combine a basic telecommunications infrastructure with enhanced and value-added network services capability.

Developed economies already have Public Switched Telephone Networks (PSTN) which form the basic telecommunications infrastructure throughout their countries, so communications facilities of their teleports are focused upon advanced functions. In the case of the teleport telecommunications facilities in New York or London, for example, satellite telecommunications earth stations providing high speed, high capacity digital telecommunications are constructed for international or domestic long-distance telecommunications and earth stations are used to transmit television programs. A local network as a teleport facility consists of an optic fiber network for sophisticated telecommunications services. An existing metallic wire network is used for telephone service. So, teleport is a bypass telecommunications facility in developed economies.

In contrast, developing economies require a system to serve as both a telephone network and as an advanced telecommunications function. In fact, in one industrial park in Indonesia that we visited, the most pressing and indeed the greatest telecommunications need was for telephone service. Large-scale foreign firms, on the other hand, have needs for high speed digital leased circuit service.

3.2 Construction of a national telecommunications infrastructure and strategic point regional development must proceed in unison.

In developing economies, the construction of telecommunications infrastructure is addressed as a long-term national economic development project. But, establishing a national network requires vast capital investment and takes a great deal of time; thus, rapidly expanding and increasingly sophisticated business needs to go unmet.

To solve this problem, it is necessary to provide an infrastructure that links the national and international networks with strategic point regional development. But in reality, this solution has not yet been provided.

We recommend the construction of teleports as a means of solving the problem of the strategic points development. The Build, Operate and Transfer Formula (BOT) used by enterprises in developed economies and the ODA should be considered to provide financial resources for construction.

3.3 International telecommunications gateways should be constructed to provide domestic users with direct access to international gateways.

Industrial parks are used to attract and foster foreign exchange-earning industries and these parks have various international telecommunications needs. The lack of a domestic long-distance network forms of bottleneck and international telecommunications requirements cannot be met. A teleport that offers direct overseas access is surely an effective solution to this problem.

In the case of a large-scale industrial park, we recommend installing an international switchboard to enable it to function as an international gateway. Such a gateway would also be able to collect international telecommunications traffic from areas near the industrial park. This idea has been included in the joint TOT/CAT Teleport Project in Thailand mentioned earlier and we will watch this project with interest as a model case of a teleport in a developing economy.

The diversification of such international gateways will play an important role in improving international telecommunications services in developing economies and will no doubt assist in the formation of the international telecommunications network covering the entire Asia-Pacific region.

3.4 The Latest Telecommunications Techniques Should be used to Best Meet the Needs of Developing Economies.

In developing economies it is not always appropriate to simply adopt the new techniques invented in developed economies. Sometimes, the techniques are used in a different way. Cellular telephones, for example, were developed for mobile communication, but, in Thailand, many business users use them as ordinary telephones. There is a long waiting period to become a telephone subscriber. But, there is no waiting period to become a cellular subscriber.

The VSAT system is suppressed by the terrestrial optical fiber network in developed economies and its popularity is declining, whereas it has the potential to be effectively used in developing economies that lack a long-distance telecommunications network.

3.5 Other Points for Consideration

In a developing economy, the system must be:

- reliable, convenient and inexpensive
- capable of expansion to meet increasing traffic demands
- able to meet the diversification and sophistication of needs
- able to adapt to global networks (N-ISDN and B-ISDN) in the future.

4. APPROACHES TO THE REALIZATION OF AND TELECOMMUNICATIONS TECHNIQUES FOR TELEPORTS IN DEVELOPING ECONOMIES

When constructing a teleport in a developing economy based on the fundamental aspects described above, it is necessary to consider the following points to determine the most appropriate system:

- The existing state of telecommunications infrastructure and existing plans for development.
- The need for present and future telecommunications services.
- The long-range plan for facilities taking into consideration changes in needs and costs.

Although there are common factors in the basic concept, facility construction plans for each teleport will differ.

For example, when constructing a teleport in an existing industrial park, it is desirable to plan a flexible communications system to be able to meet urgent needs in the initial stages as well as plans for the future. See Figure 2.

Finally, I wish to stress that this is the fact-finding, first phase of our study. I reported on this idea at the PECC Triple T Task Force Seoul conference in March.

FIGURE 2: EXAMPLE OF TELEPORT TELECOM FACILITIES

Intra-City Network

Type of System	Initial Stage	Final Stage
•Cellular Telephone	Substitute for General Telephone Network, Use for Mobile Communications	Use for Mobile Communications
•Optical Fiber and/ or Coaxial Cable		Determine Usage in Response to Telecom Needs
•LDR	Introduce in Response to High Speed Telecom Needs	

Access to Domestic Long-Distance Network

Type of System	Initial Stage	Final Stage
•Microwave Radio	Shortest Lead-Time and Cost-Effective	Use as Alternative Route to Ensure Reliability
•Optical Fiber Cable		Consider Traffic Volume etc., to Decide if Needed
•Satellite	Consider the State of Domestic Network Operation to Determine if Needed	

International Telecom

Type of System	Initial Stage	Final Stage
•Satellite	Specify Need and Purpose and Choose Type of System and Earth Station	Use as Alternative Route to Optical Fiber Cable
•Optical Fiber Cable	Determine when to introduce based on plans to lay international submarine optical fiber cables	

5. FURTHER STUDY

After the Seoul conference, the Triple T Task Force decided that this project should proceed to its second phase, which is a prefeasibility study. In the second phase, I am planning to undertake two case studies. The first will be on an example of Concept A of the Triple T Port (Teleport) and the second will be on example of Concept B. This prefeasibility study began in May 1991 and is expected to continue until June 1992. I hope to be able to inform you of the results of our second phase study at a future PTC conference.

TELECOMMUNICATION REGULATORY POLICY IN THE ASEAN COUNTRIES: IMPLICATIONS OF PRIVATE PARTICIPATION FOR THE TOURISM INDUSTRY

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1. INTRODUCTION

The changing telecommunications regulatory scene in South East Asia has important new implications from the services sector of a country's economy which includes tourism. These implications have at least a two-fold impact. The first impact is on the travel industry's use of telecommunications and information technology as a value-added service provider. The second impact revolves around the revision of regulatory structuring of telecommunications. Such revisions are being undertaken to allow for efficient and effective use of technology by service industries including tourism. Both of these impacts fall within global trends of deregulation and increasing privatization in telecommunication systems and services. Coupled with moves toward the liberalization of government owned and controlled telecommunications entities, private competition in areas of equipment and services provision from foreign enterprise is on a sharp increase in Southeast Asia.

The economies of the nations of East and Southeast Asia are among the fastest growing in the world. See Table 1.

TABLE 1: AVERAGE ANNUAL PERCENTAGE GDP GROWTH

	1980-88	1989-91
Thailand	6.0	9.8
Malaysia	4.6	9.0
Singapore	5.7	7.9
South Korea	9.9	7.4
Indonesia	5.1	6.7
Taiwan	8.1	5.7
Hong Kong	7.3	2.7
Philippines	0.1	3.8

Source: World Bank, Asian Development Bank, Jardine Fleming estimates; reported in Far Eastern Economic Review, Feb. 28, 1991.

A concomitant increase in the activities in telecommunications infrastructure and investment is being witnessed which is a necessary ingredient to the growth and development of many service industries including tourism.

2. COMPETITION

With the increasing ability of foreign telecommunications firms to do business in Asia, it is not surprising that competition for Asia's growing markets is very keen.

The telecommunications giants, as shown in Table 2, have already established offices and invested enormous resources in many of the countries of East and Southeast Asia. For example, the recent competition in Indonesia for adding 350,000 new lines to the phone network was so keen that the Indonesian government decided to let two contracts for digital switching equipment of 350,000 lines each to NEC and AT&T with a contract for equipment for 300,000 lines to let locally.

TABLE 2: REVENUE OF WORLD'S TOP TEN MAKERS OF TELECOMMUNICATIONS EQUIPMENT

Company	Country	Equipment Revenue 1988 (US$ billion)
AT&T	USA	11.4
Alcatel	France	8.9
Siemens	Germany	7.5
NEC	Japan	6.3
North Telecom	Canada	5.4
Ericsson	Sweden	3.7
Motorola	USA	3.0
IBM	USA	2.8
Fujitsu	Japan	2.5
GPT	Britain	2.0

Source: Organization of Economic and Cooperative Development, OECD.

The competition doesn't stop here as many other companies from around the globe have established operations in Asia. These include British Telecom which recently won a contract to install 300,000 new lines in Thailand. Others such as NTT and KDD of Japan, Cable and Wireless, Hutchison Telecommunications and Singapore Telecoms have grown in their international outreach in the past several years. In addition, all seven regional Bell operating companies are conducting business in the region.

In relation to competition is an increasing strategy toward the privatization of telecommunication authorities and/or private participation of companies in the development of telecommunications infrastructure and services within a country. The implication is that industries which are dependent on telecommunications for both nominal and strategic information flows may gain access to these invaluable tools in order to build upon their own ability to conduct business. For the tourism

industry, this is good news as telecommunication links and information systems are the vital nerve centers of its business.

In the ever increasing competitive world of tourist destinations, being able to access information and provide up-to-the-minute information on everything ranging from hotel and air reservations to leisure activities and hospitality services cannot be done with any hope of gaining a reasonable market share without a good telecommunications infrastructure. For example, nearly 10 million Japanese visit other countries every year. Indonesia has only been successful in attracting about 160,000 Japanese visitors in the last year while the tiny island of Guam by contrast has attracted over one million Japanese visitors. Of course, the relative convenience in terms of distance to Japan of Guam has something to do with the numbers, but it can also be said that the telecommunications infrastructure in Guam is capable of providing the complex information exchanges needed in order to smooth a visitors reservations and stay. It is very easy to book hotel, air, and leisure activities in Guam from Japan (and important for the visitor to be able to call or fax from Guam while there) due to excellent telecommunications links.

3. STRATEGIC GROWTH

Strategically, without the necessary telecommunications links as one important factor of development, tourism in Indonesia or any other country in Southeast Asia will not be able to substantially increase its competitiveness vis-a-vis other destinations. Singapore is the exception in the region as it has built its tourism industry to the point where it receives approximately 5 million visitors a year to this tiny island nation. Not coincidentally, Singapore also has the best telecommunications infrastructure in the region. While growth in one area certainly does not cause growth in the other, the point is clear for the services industries. Telecommunications infrastructure and services must improve for strategic growth in the services industries such as tourism.

Telecommunications development is now a priority in most Southeast Asian nations with some, including Indonesia, targeting telecommunications improvements for specific industrial sectors including finance and banking, manufacturing and tourism. The priority in telecommunications development can be seen in terms of trade in telecommunications equipment between the 24 developed nations of the OECD (Organization of Economic and Cooperative Development) and the Asian countries which is now measured in the billions of dollars.

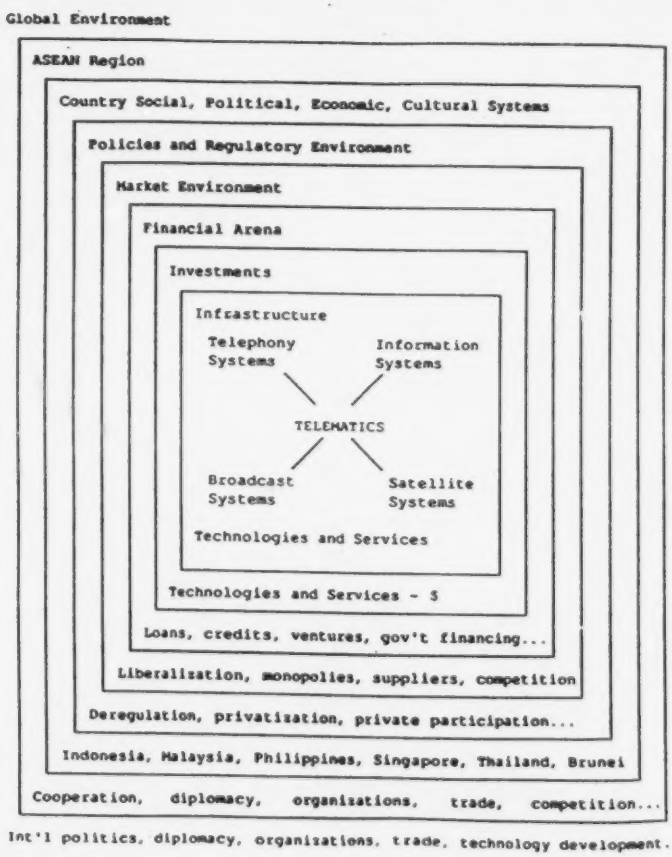
The estimated market size for telecommunications equipment and services in Asia is about 113 billion dollars for 1990 and is estimated to increase by approximately 10% per year for the next five years to around 178 billion by 1995 (SRI International, 1990).

At the same time increasing private participation in the telecommunications markets is being encouraged in many Asian countries. This ranges from the simple outright provision of equipment and services to participation in sophisticated financing schemes in cooperation with state-run entities to build very much needed telecommunications infrastructure.

4. REGULATORY POLICIES

Although the general trends for the Asia region can be noted, care must be taken to understand each country, in turn, in order to participate in the telecommunications markets. The marketing concerns involved range from understanding general trends in each country to the specific detail of laws and policies as well as contract and bid procedures. In addition, and perhaps most importantly of all, an understanding of the varied business practices and social and cultural influences on the conduct of business must be garnered as well.

FIGURE 1: FRAMEWORK OF THE ASEAN REGION TELEMATICS ENVIRONMENT



Private participation in the building of telecommunication infrastructure can be viewed as a series of related concerns as shown in Figure 1. This graphic provides an idea of the complexities involved in understanding the markets of telecommunications in Asia. It is drawn with an eye toward a particularly dynamic part of Asia, the Association of South East Asian Nations, ASEAN, which includes the countries of Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand. In the not too distant future, this grouping may also come to include Myanmar (formerly Burma), Laos, Vietnam, Kampuchea (Cambodia) and Papua New Guinea. New regional economic linkages in the form of a proposed East Asian Economic Group (EAEG) point to the vitality and trade importance of the region.

Within the context of the worldwide changes in regulatory policies, one must look at the specific trends within each of the ASEAN countries (Table 3). This gives a picture not only of the important regulatory changes of the regions as a whole, but how these changes apply and to what degree in each country.

5. IMPLICATIONS FOR TOURISM

The regulatory trends described in Table 3 have implications for the development of the tourism industry in each country.

The first of these implications revolve around tourism's use of telecommunications and information technology as a value added service (VAS). Figure 2 describes typical categorizations of value-added services. It should be noted that tourism's use of telecommunication and information technology falls across each of the categories of Figure 2 in one of the most intensive uses of the technology by a particular service sector industry. For example, the on-line information and database systems as a VAS is represented in the airline industry's extensive computer reservation systems (CRS). These systems are not only used for information provision but also transaction services as well as strategic marketing. Figure 3 provides a picture of the increasing importance of VAS in the Asia-Pacific region. The growth in VAS subscribers is indicative of the growing dynamism between telecommunications and the various service industries. This points to an increasing demand for not only VAS but the necessary telecommunications infrastructure which make these services possible in the first place.

It is in the building of telecommunications infrastructure and the related investment concerns which give rise to the second implication of changing regulatory structures for the development of the tourism industry. Namely, private participation in telecommunication development will need to take on a more prominent role.

TABLE 3: TRENDS IN TELECOMMUNICATION REGULATORY POLICY IN THE ASEAN COUNTRIES

Indonesia
- Increasing private participation in government owned and controlled telecommunications and information systems.
- Law 3/89 allowing for private ownership and control for non-basic services.
- No current plans for further liberalization, deregulation or privatization of the telecommunications authorities, Perumtel and PT Indosat.
- View toward a strategic policy which will develop telecommunications infrastructure in prioritized sectors (i.e., financial institutions, manufacturing and tourism).

Malaysia
- Complete privatization of the telecommunications authority Malaysia Telecom.
- Increasing private participation and competition in all areas of telecommunication development.
- Increasing liberalization of markets for telecommunications and information systems equipment provision.
- Moves toward a more deregulated operating environment are evident.

Philippines
- Some private competition for international telecommunications systems including gateways and VSAT systems.
- Increasing government participation in infrastructure development not provided by private interests especially in rural and remote areas.
- Some movement toward deregulating domestic long-distance telecommunications.

Singapore
- Increasing international competitive focus of the telecommunications authority, Singapore Telecom.
- Increasing liberalization of markets for equipment and services provision.
- Increasing private competition for equipment provision to Telecom.
- Proposed partial privatization and deregulation of Telecom. Will be the first Statutory Board in Singapore to be considered for privatization.

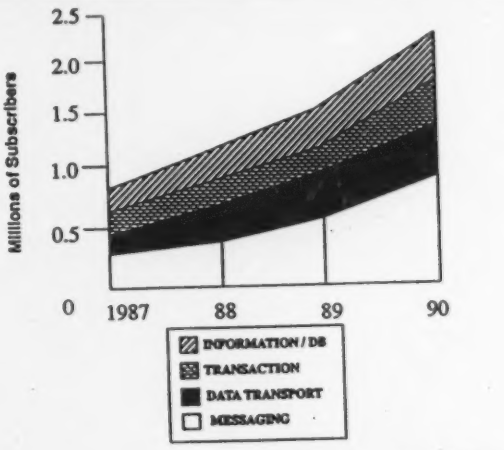
Thailand
- Looking at long-range plans for the possible privatization of the telecommunication authorities TOT and CAT.
- Increasing private participation in infrastructure development through a build operate and transfer, BOT, scheme.
- Increasing liberalization and competition in equipment provision.
- Private ownership and control of non-basic networks and services.

FIGURE 2: VALUE ADDED SERVICES

INCLUDING BUT NOT LIMITED TO:

1. DATABASE AND ON-LINE INFORMATION SERVICES
   - Bulletin Boards
   - News Services
   - Financial Services
2. INFORMATION PROCESSING
   - Off-Shore Data Entry
   - Distributed Data Analysis
3. TRANSACTIONAL SERVICES
   - Electronic Document Interchange (EDI)
   - Order Placement
   - Electronic Funds Transfer (EFT)
   - Point-of-Sale Transactions (POS)
   - Ticketing and Reservations
   - Securities Trading
4. TIME-DELAY SERVICES
   - Message Handling (Data/Voice)
   - Store-and-Forward
   - Store-and-Retrieve
5. DATA TRANSPORT SERVICES
   -High Speed Packet and Circuit Switched Services

FIGURE 3: ASIA PACIFIC VAS SUBSCRIBERS



In Indonesia, increasing private participation in the development of telecommunications infrastructure will help build much needed facilities that the tourism industry needs for not only its own survival but for strategic growth. These are infrastructure needs which cannot be met by government alone and require the involvement of the private sector if services industries such as tourism are to flourish in the near future. In Malaysia and Thailand, the increasing participation of private enterprise to develop both basic and non-basic telecommunications infrastructures will help to accelerate the pace of growth of the tourism industry in each country as access to vital telecommunications links becomes more readily available. This is being made possible, in part, by the revision of the regulatory structure in each of these countries.

6. REGULATORY RESTRUCTURING

Telecommunication and travel are inextricably linked. The relationship between the travel and telecommunication industries include intra- and extra-industry service networks in a link which provides telecommunications for enhanced travel services. It also includes a relationship of substitution of telecommunication for travel in a telecommunication transportation trade-off (Wedemeyer, 1990).

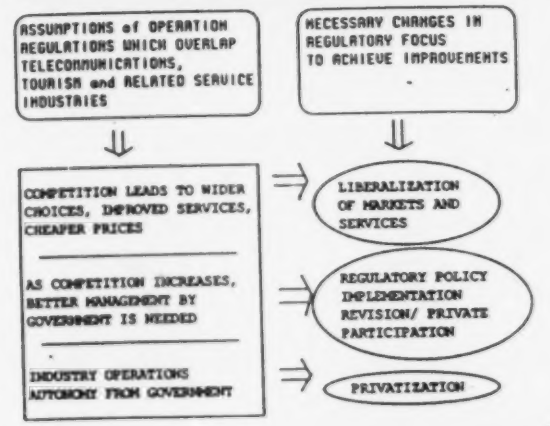
Of the former relationship (intra- and extra-industry links), one crucial area specific to the tourism industry is the ability of the industry itself to build and operate its own telecommunications networks (non-basic services) with possible access to interconnect with the government-owned public switched network. This is especially necessary where government entities are slow or unable to provide innovative technology to the tourism industry. Obviously, such a matter is in the domain of domestic telecommunications policy in each country and each will necessarily respond to the growing needs of the tourism industry in its own fashion.

However, it should be noted that in order to provide a more efficient and effective telecommunications network to serve industries such as tourism, a revision in the regulatory structuring of telecommunications is a necessary first step. This might include the restructuring of state owned and controlled companies along the lines of business units rather than bureaucratic function. Such a restructuring would make these entities more responsive to the needs of tourism as well as other service industries as shown in Figure 4. The effects of such restructuring can be seen especially in Malaysia and Singapore which have already moved in this direction. Thailand and Indonesia could also benefit from such a restructuring. This is crucial in light of the fact that for the tourism industry to grow, it must not only be a user of telecommunications but become an information service provider in its own right.

It is clear, however, that for industries such as tourism to flourish, an increasing component of private participation in building the necessary telecommunications infrastructure is needed especially in countries where the telecommunications authority is in a relatively weak position to provide such infrastructure to the industry. These regulatory changes are at the heart of improving the relationship between telecommunications and tourism as shown in Figure 5. Regulatory changes must be made in order that the vital telecommunications links can be made available to industries such as tourism which are dependent on them.

FIGURE 4: TELECOMMUNICATION BUSINESS UNITS

FIGURE 5: IMPROVING TELECOMMUNICATIONS AND TOURISM RELATIONSHIP IN ASIA-PACIFIC


ASSUMPTIONS of OPERATION REGULATIONS WHICH OVERLAP TELECOMMUNICATIONS, TOURISM and RELATED SERVICE INDUSTRIES
NECESSARY CHANGES IN REGULATORY FOCUS TO ACHIEVE IMPROVEMENTS
COMPETITION LEADS TO WIDER CHOICES, IMPROVED SERVICES, CHEAPER PRICES
LIBERALIZATION OF MARKETS AND SERVICES
AS COMPETITION INCREASES, BETTER MANAGEMENT BY GOVERNMENT IS NEEDED
REGULATORY POLICY IMPLEMENTATION REVISION/ PRIVATE PARTICIPATION
INDUSTRY OPERATIONS AUTONOMY FROM GOVERNMENT
PRIVATIZATION

7. CONCLUSION

Specific market environments, financial considerations and actual investment for infrastructure development are to a great extent dependent on the regulatory environment of an industry. Indeed, when industries overlap such as is the relationship between tourism and telecommunications, the regulatory policies of one spill over with effects in the other. Conflict arises when priorities for growth in one sector are blocked by policies of convenience in another sector. With the clear interdependence of tourism to telecommunications, regulatory policy changes to more liberalized markets for telecommunications equipment and services provision and increasing private participation in telecommunications infrastructure development will lead in the long run to a stronger, more vital tourism industry.

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21ST CENTURY TRAVEL PARTNERSHIPS: NETWORK-BASED STRATEGIES

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1. INTRODUCTION

Our Pacific Rim research confirms that information technology will play a major role in forming and maintaining airline partnerships in the 21st century. Alliances will be essential because travel products to meet the demands of the future cannot be delivered by any one enterprise. Information technology will integrate the development, delivery and support of these future travel products, and coordinating alliance policy and information technology policy is today's most critical strategic management task. While these policies may begin to produce benefits in the 1990s, they must be focused on developing the infrastructure and relationships needed in the next decade, the beginning of a new century.

A proposal for the travel product of the future, and a brief look at recent advances in management theory, defines the structure of service delivery in the next century. Successful strategic uses of networks in three retail industries illustrate ways in which travel industry organization, and thus the management tasks, will be different from the airline business we now know. A value-added model clarifies some of the urgent near-term and long-run policy implications for government and the industry, and a practical course of action for carriers and industry groups is identified.

1.1. Situation: An Actual Journey

A recent semi-annual field research journey to Southeast Asia to gather hard data and impressions about CRS-related issues required meeting with more than 50 travel industry managers in ten capitals. Planning and arranging this work required hours of preparation: first research to find the correct people to meet, then letters, phone calls, and faxes to set up and confirm appointments and travel arrangements.

This took four weeks and 35,000 miles on 15 flight sectors, the long sectors on weekends. I averaged only two and one-half interviews or meetings per working day. In one city I know well, I arranged four interviews each day, while on my first visit to another, I was able to meet only four persons in as many days.

On every sector of this actual journey, flights left and arrived on time, cabin service and meals were flawless, and luggage magically reappeared. Imagine that you are doing this part of this research:

Day One: you arrive in the city well fed and rested after a long but comfortable evening flight, collect your baggage and pass through immigration and customs without incident, stopping to exchange traveller's cheques before heading for the limo stand.

Arriving late at a four-star hotel, you discover that a delegation of businessmen from a wealthy nation is in town and the reservation in your name has been "lost". This is settled, but well past midnight. On awakening, you spend the morning of Day One calling to confirm the appointments for the next two days. You discover that Day Two arrangements are unworkable because the ground travel time between appointments is insufficient. The task of completing travel and schedule arrangements for day two is turned over to a charming, well-educated, but inexperienced young lady in the Hotel Business office, and Day One nets one interview.

Day Two: hoping to make up for the lost time, an internal flight is booked to the most distant appointment. Arriving for the early morning flight for which you had a reserved seat but no ticket, you discover that the airport ticket office opens only after the flight leaves. You cannot board without a ticket. The next flight is fully booked, and unfortunately all the passengers show. The charming young lady at the hotel has taken this day off, so you shuffle appointments, spending hours digging through telex and facsimile directories to rearrange your schedule in the next city. Results: one interview lost, one rescheduled, and one completed.

Day Three: check out of the hotel, arrive at the local airport with a ticket, take the early flight to complete two interviews, enjoy negotiations with another taxi driver (for an added fee, he would take you where you wanted to go), take a return flight and leave for the next city late that evening. You have no time to stop at the hotel, and thus don't see the telex sent to tell you that an appointment set for the following afternoon will be available only early the next morning.

Reaching the next city that evening, a lovely morning is spent selecting and making weekend arrangements at a nearby resort, which turns out not to greatly resemble the brochure when you finally arrive. You call home to speak with your wife, call your office, then spend a few hours on the beach thinking about how you would have preferred to organize the entire trip. As you will never repeat precisely this journey, most of the specific knowledge you have gathered (at your personal expense) about arrangements has little value. You would have paid to have this information at the correct time and place, if there were only someone to pay.

When you reach home, calendars and various notes will have to be scrutinized, various slips of paper sorted into stacks, and a claim for many (in my case never all, because my records are so rarely complete) eligible expenses completed and submitted. Much later, credit card bills will trickle in, and later yet, income tax forms.

Scorecard: Three days of your life gone forever, four meetings not yet completed, uncertainty about your expenses and taxes, and the job of a clerk yet to do.

1.2 Target: The Ideal Journey

The major problems with this journey were unnecessary effort and lost productivity due to a lack of information at the right time and place. Business travel cycles begin with a plan based on travel activity-related information, which must be accessible from any point from which a traveller makes the travel decision. Planning must integrate the purpose for travel, company policy, and the individual needs and preferences of travellers, fitting these to the choice of available services, terms, and conditions.

Delivery will be tailored to individuals: I want to be connected, partly to receive or send messages, but mostly for online access to information or services linked to the specific purpose of my travel. Other travellers will have different information, and thus different needs. Expense and tax reporting can be integrated into the billing process.

1.3 Proposal: The Travel Information Platform (TIP)

Travel, defined as all expenses for activities away from home, is the world's largest industry, with individual components provided by diverse suppliers including air carriers. Profit margins for commodities are lower than for differentiated products created by assembling generalized components into a compound product to meet a specific need. This creates pressure to integrate existing travel services into differentiated compound products, or what we call "end-to-end" travel experiences. These products are now available only in sheltered resorts such as Club Med. With expanded capacity to manage information and transactions beyond this limited environment, a range of individualized "end-to-end" travel products can be designed and provided through a logical network linking the multiple organizations required to provide each component. This network is the travel information platform. Becoming the primary global access point for integrated business travel-related services will be a strategic industry goal. The cost of losing the struggle to be an early entrant will be a smaller share of the higher business travel margins. Once such a network is established, the marginal costs for expansion are low, and up-market leisure travel packages can then be designed and distributed, followed by low-margin tours.

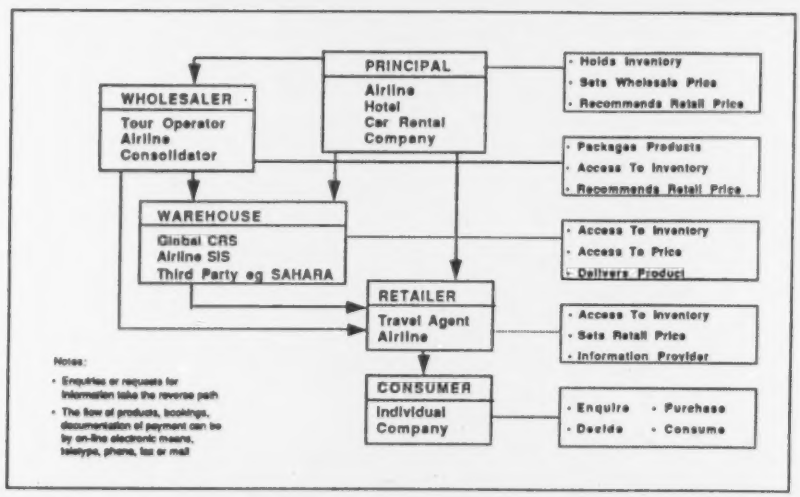
1.3.1 Business Travel: Your Office in the World!

Compound travel products will evolve by adding the differentiated value of tailored information to physical air travel products; not only financial control data, but specific data products relevant to individuals, their destinations and their purposes for travel. Code-sharing, by tying route networks and schedules together for the travel agent and traveller, is the first step toward integration of the travel service delivery network.

New technology will play a role in the evolution from "manual mode" to the 21st century automated services offering end-to-end (or doorstep-to-destination-to-doorstep) service. Club Med "pop bead" currency will be replaced by "smart cards" the world over, travel brochures will give way to CD-ROM or videos, and networks will deliver services from databases and maintain records for corporate accounts and individuals, all at a healthy profit.

The key issues: who can create these products, should you create them, and what strategy should be employed? A simplified view of travel trade distribution shows the linkages among several of the elements within.

FIGURE 1: SIMPLIFIED SCHEMATIC OF TRAVEL TRADE DISTRIBUTION



1.3.2 Who can create the Travel Information Platform (TIP)?

Any player might attempt to create TIP, but theory suggests that only efficient players will survive. Efficiency is gained from economies of scale, scope and organization. Scale is needed to absorb the huge cost of operating a global TIP network. Scope is required to create and provide global access to TIP products.

Organization can be provided through markets, in which needed materials or services are purchased, or by vertical integration, by acquiring suppliers and distributors; the most efficient mode will be the strategic choice. Efficiently organized firms can avoid inefficient activities and concentrate on those in which they have competence. They must have access to the supplies and services needed to meet buyer needs. Recent research indicates that individually efficient firms seeking joint advantage may be the most efficient form for the economic circumstances of the 21st century. Jarillo calls this new form the strategic network.

The essential features of the strategic network are:

- Long-term, purposeful arrangements among distinct but related enterprises that allow members to gain or sustain competitive advantage vis-a-vis competitors outside the network.

- Membership is essential to their competitive market position, as when competence in one arena is offset by weakness in another. Home market reputations and landing rights for long-haul routes are difficult to acquire or imitate, and the online connection is a low-cost way to share key resources.

- The primary feature needed for a lasting alliance is trust, an assumption that members will use identical decision rules in fulfilling obligations. Trust originates in compatible values and motivation, and in the intrinsic situation of members.

In practical terms, this means that TIP partners must be selected who bring efficiency in activities which generate shared value, and have congruent goals. The emerging Pacific CRS alliances may have advantages over other regional entrants in the TIP battle.

1.3.3 Who should create TIP?

These trends drive the forces underlying the immediate challenges to carriers. Recent events in the Pacific consistent with these six trends suggest that fundamental changes are underway, and that the strategic responses will be based on the cooperative use of information technology. Two simple patterns have emerged: one we may call a neocolonial network, in which weaker carriers sell equity shares to larger and more powerful carriers, soon reappearing via code-sharing in the reservations systems of the larger carrier as an extension of its route system; and what we may think of as strategic networks, in which relatively equal players join to exploit economies of scale and scope through the cooperative operation of a shared distribution system.

FIGURE 2: SOME LESSONS FROM THE 1980s FOR THE 1990s

- As private and industrial consumers became more experienced, demands for goods which precisely met expectations increased,
- As firms became experienced at meeting market demands, pressures for intervention decreased,
- As enterprises grew via vertical integration, they discovered that economies of scale may not equal dis-economies of scope,
- As affordable air transport combined with telecommunications, the worldwide markets predicted twenty years ago by McLuhan appeared.
- As cost pressures combined with shorter product life cycles, supplier and buyer co-ordination became time-critical.
- The end result: enterprises became more interdependent and individual tasks, especially management's, became more complex.

As new entrants invade the Asian market, networks will evolve to more elaborate forms. Hertz, quietly adding India to its 1,200 Asian outlets, views its US$200 million investment in airline-compatible reservations systems as a strategic factor for growth.

FIGURE 3: TRAVEL INFORMATION PLATFORM SEGMENTS

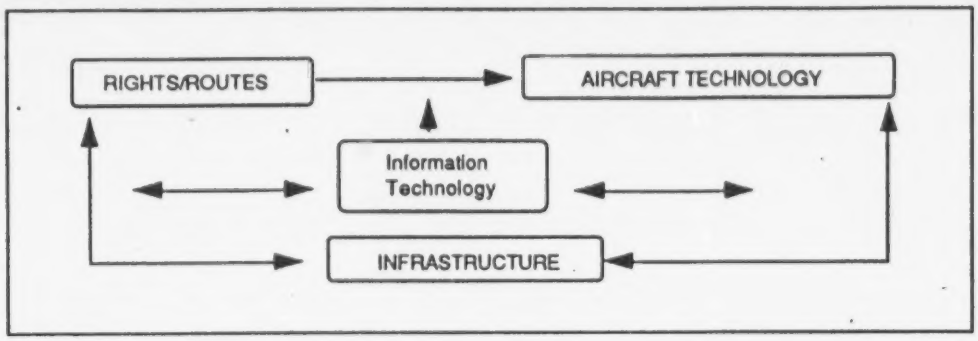
TRANSACTIONS	INFORMATION			DECISION MAKING TOOLS
	USER SPECIFIC	PRODUCTS		
		SPECIFIC	GENERAL	
• Reservation • Ticket • Payment	• Preferences • History • Itineries	• Availability • Discounts	• Features • Prices	• Agent • Customer

Source: SRI International

The Jaguar hotel distribution system is based on a newer (and lower cost) technology platform than air travel reservations systems. The Jaguar database holds thousands of hotels, with CRT displays of location maps and hotel properties, and is available to CRS subscribers. And the global growth of American Express Travel Services represents the most serious TIP contender to date. Each of these varied competitive initiatives are poised to gain a share of the margins from value-added travel, and will mature late in the next decade.

Travel agents are a critical marketing channel for airlines, selling up to eighty percent of seats. Travel agency chains have had too little capital and bargaining power to wield strategic clout, but this is rapidly changing. Investing in computerized tools to manage travel arrangement processes, and now demanding much larger commissions in fast-growing Pacific markets, the more aggressive chains will soon become serious TIP contenders.

FIGURE 4: STRATEGIC MODEL OF THE AIR INDUSTRY



In Asia, agents are smaller and more closely linked to carriers than in the West, and the agent/carrier relationship is maintained through a complex set of quantity discounts and other incentives. Bulk seats are actively traded through competitive secondary markets in Bangkok and other loosely regulated markets.

Asian agents have been quick to learn the value of the network, and have shifted CRS hookups in response to opportunities for greater margins. This growing market represents an opportunity for airlines and financial services firms to acquire the critical market knowledge assets of the small "bucket-shop" agents through a network which gives smaller agents a competitive service edge.

The wide availability of comprehensive, yet differentiated, compound products with short life cycles will make single firm market dominance less likely. Specialized (by language, industry or component) firms can be structured to be efficient at adding specific value at different points in the chain. If information technology is structured to minimize the costs for negotiating, monitoring, and enforcing agreements between these firms, then flexible alliances organized around networks will emerge as the most efficient and responsive organizational structure. In the 21st century arena, bargaining power, control of standards, and network capacity will thus emerge as prime strategic weapons.

This has immediate strategic relevance to the international air travel industry. Environmental factors such as new aircraft technology, rapidly developing economies, the liberalization of government protectionism policies, and shifting work force demographics are motivating the globalization of the industry.

Internal factors will encourage the industry to adopt cooperative structures and capture the economies of scope and scale essential to the Travel Information Platform:

- Structural (in addition to political and legal) barriers to horizontal integration (mergers) between national carriers.
- The failure of vertical integration to produce efficiencies.
- A long tradition of cooperation in the industry.
- A strong capacity to manage telecommunications flows and computing activities across organizational lines.

2. WHY NEW STRATEGY DEMANDS NEW INFORMATION TECHNOLOGY

As individuals, governments, and industries gain experience in harvesting the fruits of deregulation (or liberalization), the demand for flexible, convenience-oriented goods will accelerate. Fast-paced delivery of these products and services will require information flows linking decisions with actions in real time.

Many of a traveller's transactions now go through a computer, and via "smart card" technology, nearly all can easily be captured. This provides two sources of advantage: the ability to offer complete tax and expense reports tailored to the needs of firms and travellers, and a dynamic consumer preference database.

Complexity will create new needs to manage interactions between groups: of individuals, of activities, of business units, and of cooperating firms. Data flows will be the means of cooperation.

2.1 What Has To Be Done

A strategic model of the air transport industry is depicted in Figure 4. Each element impacts the others and provides different dynamic opportunities and threats: while changes in aircraft technology economics should be incremental, rights/routes links to airline income streams are increasingly vulnerable to attack, and infrastructure has been neglected as a source of income. The model also illustrates information technology's potential to transform the relationships between these elements.

The TIP strategy transforms airline infrastructure from an expense center to a revenue source, at the cost of a fundamental shift in the scope, access patterns, and complexity of business processes.

2.1.1 Managing Scope

Enterprises which learn to manage scope well can rapidly increase capacity and respond to new markets without increasing the level of risk. A fast-growing retail bakery chain will provide a model of the use of computers by carriers to control the key management processes which affect the relationships with independent agents.

2.1.2 Managing Access

Doubling air traffic volumes in the Pacific and other regions requires the capacity to serve and manage travel agency chains. Enterprises which learn to manage access can service channels without being captured by them. Our model here is Volvo Cars.

2.1.3 Managing Complexity

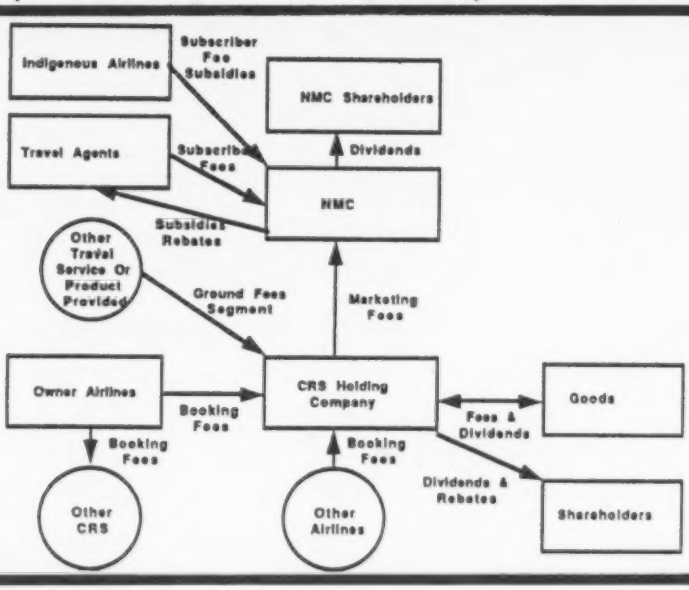
The global travel industry is fragmented into a variety of components, each supported by various evolving technologies, few of which are compatible:

FIGURE 5: EXAMPLES OF TRAVEL-RELATED TRANSACTIONS:

- Financial and Legal Instruments;
- Banking Services, Travellers Cheques, Credit Cards, Insurance;
- Letters of Credit, Customs Declarations, and Contracts;
- Personal Services
- Travel Arrangements, Hire Transport, Convenience;
- Shopping, Accommodation
- Rental Vehicles, Telecommunications, and Business Services;
- Leisure Activities;
- Reservations for Tours, Expeditions, Theatre Tickets, Shopping;
- Infrastructure;
- Baggage Operations, Ground Transport, Telecommunications

Selecting the financial transactions category from the above list for further examination illustrates, in the following figure, the complexity that requires management.

FIGURE 6: MAJOR FINANCIAL FLOWS ASSOCIATED WITH CRS PROCESSING (COMPUTER RESERVATION SYSTEM)



An integrated travel service must be able to link these physical activities and the related transactions. A compound travel product adds the value of tailored information to the integrated product.

These are complex tasks, now far beyond the current capacity of the industry. Whoever fills this need will not only earn the margins from the value-added services, but will gain bargaining power from the client relationship, which they will be able to use to capture a portion of the air travel margins.

2.2 Three Information Technology Initiatives

These external and internal forces are not unique to air travel, but are also critical in other industries. They interact to create complex forces which de-stabilized and transform the basis of competition. Three successful responses to these forces, drawn from retail industries outside the air travel context, show the interaction between information technology and firm strategy.

2.2.1 Managing Scope: Mrs. Fields' Cookies

Mrs. Fields' Cookies became one of the legendary growth stories of the late 1980s, distributing critical planning, operations and control processes through a network of small computers to the retail stores where the product was created and sold. A low-cost network imbedded those key business processes which supported the organization's growth and profit strategy into all small retail outlets: matching production and demand patterns, monitoring

efficiency and quality, and auditing cash flow. For air travel, the ability to rapidly and efficiently distribute access to new markets while retaining control has great potential value.

There are clearly existing parallels in the travel industry. Travel agent workstations that distribute sophisticated client and office management capabilities to individual agencies are one example. Northwest's distributed expert system on a PC platform, is another.

2.2.2 Managing Access: Volvo Cars

Relationships between maker, distributor and retailer are often sensitive. The Volvo Cars of North America Logistics Vehicle Information System (LVIS) completely restructured distribution business processes, from initial factory order to delivery. LVIS implementation required key policy changes, restructured data resources, and reorganized business processes: in the factory, at North American headquarters, and in the field offices.

Airline influence over travel agents, particularly in home or hub centers, provides an example of how this concept has been applied in the past. The evolution of CRS (Computer Reservation Systems) into GDS (Global Distribution Systems) is reducing this phenomenon, often referred to as the "halo effect".

FIGURE 7: THE HALO EFFECT

> The principal method by which carriers can encourage incremental bookings via their CRS is the so-called 'halo effect'. A travel agent, using any CRS, has a natural tendency to book the flights of the carrier providing the system. This behaviour has been well-documented and is accepted by CRS vendors, although the precise mechanism causing the incremental bookings to accrue is complex and not dependant on any one factor. The travel agent tends to have increased confidence that the information available about the CRS vendor's services, fares and availability are accurate, as opposed to those off-line carriers that may participate in the CRS. Wishing to avoid customer dissatisfaction through offering inaccurate information, the agent carrier tends to favour a carrier for which he believes the best information is available.
>
> SOURCE: Travel and Tourism Analyst, January 1987
> The Economist Publications Limited

2.2.3 Managing Complexity: Child World

Child World's low-cost "retail machine" strategy was envisioned as a seamless fit between inventory and demand. Selective replacement of core technologies allowed them to capture and share sensitive data from their POS network with key suppliers early in each season. This sharply improved the co-ordination

between market behavior, merchandising functions, and supplier shipments. The new system improved integration between Child World buying, merchandising and distribution activities, and facilitated a critical shift from a reactive to a proactive merchandising stance.

In the case of air travel, the complexity of even the existing renumeration systems is reflected in the statement from one emerging GDS that our system contains... "350,000 city pairs; 52 million fares; schedules of 650 airlines; plus total access to more than 25 airline and travel related databases." For the airline owners the GDS will add value by providing rapid information to management which allows the airline to use pricing to better match seat supply and demand to optimize flight schedules and capacity utilisation.

3. THE EMERGENCE OF THE 21ST CENTURY ORGANIZATION

To endure, the Travel Information Platform must stand on four strategic legs: Product, Management, Technology and Cooperation.

3.1 TIP Products

Each TIP product must offer the features which buyers demand, be reliably available worldwide, and be efficiently distributed alongside other TIP products. This requires controlling package tour costs like chocolate chip cookies; and planning, assembling, delivering, and monitoring complex premium TIP business travel services through specialized channels like a premium automobile; while gathering and routing time-sensitive market intelligence to suppliers to ensure product availability.

3.2 TIP Management

The choice of three retailers for models of the management steps that must be taken to manage scope, access, and complexity may seem a bit unusual, but the competitive nature of retailing creates an excellent research laboratory for techniques which can be applied to maturing industries such as air transport. However, there are unique strategic elements in air travel, and new industry leaders will emerge. In a shifting economy, purely financial alliances have short half-lives, and linkages between firms must be based on lasting mutual benefit: specialization by market, by activity, and more complex arrays integrating several inter-firm relationships. These will shift as markets and technologies change and learning diffuses.

The initial direction that the industry takes may be towards centralization or concentration due to the high infrastructure development costs to be borne by the pioneers. In time, however, there will be a return to a decentralized structure with many small players being able to prosper by benefitting from a TIP at marginal cost. An evolution towards an EDI (Electronic Data Interchange) approach is one way of visualizing this scenario.

3.3 TIP Technology

Here are three firms of varying scale and scope, selling products with different attributes through widely divergent channels to unrelated markets, yet each with a unique strategy linked to the use of computer and communications tools. The common thread is a link between strategy and the key information technology roles: automating and communicating, informating, and integrating.

3.3.1 Automating and Communicating

In each case, automation and communication play a different strategic role: for Mrs. Fields, the local workstation was a substitute for the scarce and expensive retail management skills required for growth. The ability to anticipate and influence the arrival of individual Volvo vehicles increased dealer margins and avoided lost sales due to local product shortages. Child World's POS network, linking retail sales and distribution, increased margins by reducing distribution and stockout costs in a highly seasonal industry. These factors are also active in air travel.

3.3.2 Informating

Shoshanna Zuboff, Harvard professor and author of <u>In the Age of the Smart Machine</u>, suggests that empowering people with timely overall knowledge of the processes of the firm will make them capable of making local judgments about production and distribution. In varying degree, this is true for the biscuit shop, vehicle distribution, and toy merchandising managers in our three examples. It is certainly true of travel agents, the critical interface to the air travel market. The strategic question: for which organization will they capture and increase profit margins in the future?

3.3.3 Integrating

Mrs. Fields integrated headquarters and field operations, while Child World first integrated internal activities and data, then extended limited data access to suppliers. Volvo's target was the integration of production and distribution processes across functional, enterprise and national boundaries, in order to optimize the fit between a differentiated product and their largest market. Volvo accelerated the transfer of knowledge and introduced new design and project skills into MIS functions via the consultant, adding value for future projects. A primary objective was team learning, a lesson often overlooked.

3.4 TIP Cooperation

<u>Build Trust</u>: As previously noted, the economics of cooperation suggests that trust provides high returns. Three techniques for developing the trust necessary to create an alliance are:

- sharing data and agendas with potential allies when possible (instead of merely when necessary);
- signalling competitors via disciplined tit-for-tat retaliation and peacemaking protocols;
- assuming a greater burden of risk than weaker allies.

Nurture Alliances: The five life cycle processes: selecting, negotiating, monitoring, enforcing, and exiting must be managed.

Manage the Connection Asset: It is the capacity for connection which will form the base for the 21st century organization.

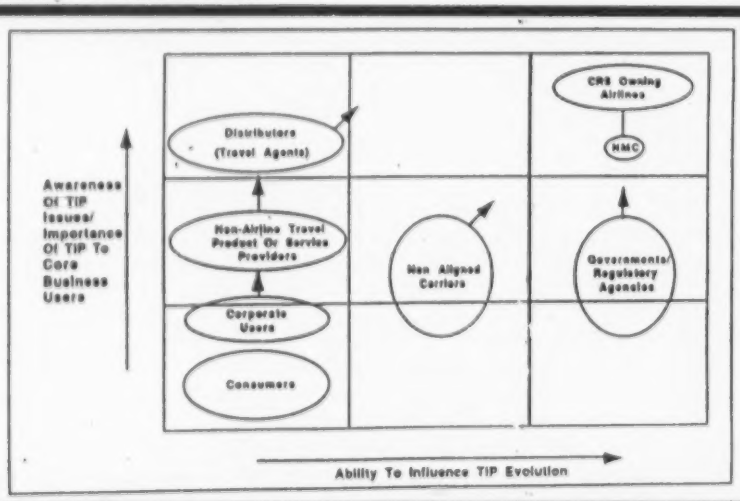
Trust will be an important asset, which can be nurtured through network features and equal access to information, as confirmed by the popularity of CRS features such as last-seat availability.

Interdependent long-term relationships between firms, combined with the complexity and dynamism of the air travel industry environment, suggest that existing conflict resolution mechanisms may not be adequate, particularly for technical and procedural issues. This is a strategic opportunity for industry groups such as the Orient Airlines Association.

4. JOINT ACTION: INDUSTRY STANDARDS AND PUBLIC POLICY

The original airline reservation systems performed a simple inventory control function by matching available seats to a passenger name record, using the pioneering networks originally developed for operational co-ordination. The simple information technology used to perform these functions became standardized, and was then extended to other distribution functions. But these pioneering airline industry standards have been superceded by a new set of more widely useful standards.

FIGURE 8: STAKEHOLDER INVOLVEMENT IN TRAVEL INFORMATION PLATFORM (TIP) DEVELOPMENT



Current CRS systems, coordinating air travel operations with access to markets, have the ability to link airlines with other enterprises to provide the base for end-to-end travel services. Yet these strategic resources rest on a technology foundation which creates incredibly high costs for change and adaptation, the very capacities which will be required to meet the Travel Information Platform challenge. The lack of modern standards is a technical point on which the evolution of the industry is vulnerable, which can only be resolved through joint action.

SUSTAINABLE GROWTH

SUSTAINABLE GROWTH

The papers in the preceding sections have been concerned with national and regional growth, too slow as well as too rapid growth. In this concluding section, sustainable growth becomes the central issue. There are three papers in this section.

In their paper, Witt and Gammon report that there exists a considerable literature on the definition and concept of sustainable development, and their paper provides many references to that literature. It encompasses not only the more commonly recognized environmental issues, but also social issues such as welfare and equity. They note that tourism can have marked environmental and sociocultural impacts. The importance of recognizing these impacts and reacting so as to encourage sustainable development is emphasized by the authors. The potential exists for the tourism industry to adopt a more proactive role in enhancing the environment, thereby improving the quality of life for the host population and, in so doing, ensuring tourism's long-term viability.

The second of the three papers is by Parapak. It summarizes the Indonesian situation with attention to concerns that are region-wide. In particular, telecommunications is a "vital" infrastructure for national development, including but not limited to tourism. In turn, tourism requires high quality telecommunication services. The author concludes that both telecommunication and tourism are expected to grow at a sustainable rate in Indonesia.

The third paper by Harms (editor turns author) selects two topics that are mentioned briefly in several of the papers and that promise to be increasingly important in the future. These are: the small and remote destinations and off season opportunities for human resources development and deployment. Certainly, any reader of the set of papers contained herein might select topics other than these two for further elaboration. The point is that the conference papers presented at Bali are a rich and continuing source of information.

The three papers in this section, two presented at Bali, and the third prepared by the editor to draw attention to two topics, conclude this volume.

L.S. Harms

TOURISM AND SUSTAINABLE DEVELOPMENT: ENVIRONMENTAL AND SOCIOCULTURAL ISSUES

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1. INTRODUCTION

The tourism industry is of crucial importance in world economic terms. It is estimated that tourism (domestic plus international) is the world's largest industry in terms of expenditure (over US$2 trillion) and employment (100 million jobs), and that it is also the fastest growing industry in the world.

The effects of tourism can be felt, however, far beyond its economic impact; the environmental and sociocultural impacts of tourism are receiving increasing recognition and attention. While some of these are positive -- for example, tourism can improve understanding among individuals from different countries and lead to more tolerance of other lifestyles -- many of the effects are negative. Overcrowding, degradation of the natural environment, and the introduction of alien social values are some of the many factors which can give rise to a "tourism backlash" or anti-tourism movement in host countries.

The purpose of this paper is to stress the importance of taking the environmental and sociocultural impacts of tourism into account in order to encourage **sustainable** development. We start by examining the concept of sustainable development, and then move on to its interrelationship with tourism. Attention focuses on developing countries, with particular emphasis on the Southeast Asia/Pacific Islands region.

2. SUSTAINABLE DEVELOPMENT: DEFINITIONS, CONCEPTS AND ISSUES

There are various definitions of sustainable development. Jacobs (1990, p.9) states that:

> Sustainability implies that people living in the future should have opportunity to experience the same level of well being from and use of the natural environment as the present generation.

The World Commission on Environment and Development (WCED) views sustainable development in somewhat more general terms:

> Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. (WCED 1987, p.40)

Here the definition is not restricted to considerations relating simply to the natural environment, but is extended to encompass broad social concerns.

There are major themes, such as futurity, welfare and equity, contained within the concept of sustainable development. The WCED (1987) explains these as follows:

- Futurity. In order to meet the needs and interests of present and future generations, the environment must be properly managed and substantially improved. Long-term planning, investment and other considerations must supersede short-term gains.

- Welfare. Improving the general well-being and quality of life for all, and, in particular, addressing the essential needs of the world's poor.

- Equity. Ensuring that the distribution of resources and wealth within a country, amongst countries and between industrialized and developing countries is more equitable. Of particular concern is that the distribution of economic costs should be fair.

Proponents of sustainable development also argue strongly for the integration of social, environmental and economic dimensions of policy, wherein each is assigned the same importance and priority.

In industrialized countries, sustainable development is a "modern day ideology" which has historical roots in classical economics, particularly resource economics. Broadly speaking, sustainability acts as a market constraint on the growth cycle of production and consumption - a cycle which generates waste, causes pollution and depletes resources.

In developing countries, such as those in Southeast Asia, the concept of sustainable development has been **applied** for centuries:

> ...traditional land and marine practices have been followed in the region for up to three thousand years. Complex regulatory systems of traditional rights and taboos [have] developed in tandem, in many cases acting to conserve island resources, and which [have] remained deeply embedded in the cultures and social fabric of the Pacific communities. (Carew-Reid 1990, p. 33)

Furthermore, these resources were "traditionally considered common property" (Carew-Reid 1990, p. 33). Thus, sustainability in developing countries meant that there was close interaction and dependency between the indigenous population and the resources; whereby, community ownership and management of the natural resources not only ensured the preservation of the environment, but also provided such essentials for survival as food, fodder, fuel-wood and timber.

Events in recent history have brought about the demise of sustainable practices in tropical Asia and elsewhere. These include:

- Expropriation of land via political colonialism.
- Resource exploitation.
- Scarcity of land and change in land use.
- Overpopulation.
- The introduction of new technologies.

Presently, disparate views exist between developing countries whose priorities are first to raise their own living standards to acceptable levels, and Western nations which generally view the destruction of the environment as a pressing problem affecting everyone in the world (Lea 1987). These are not unrelated issues. As noted by the WCED (1987, p.3), "poverty is a major cause and effect of global environmental problems". For example:

> Poverty in Asia is intertwined with unchecked population growth. The population of Asia has reached 3 billion people and accounts for 60 percent of the global total .... This population explosion involves the rural poor, who depend on agriculture and livestock. Overuse of resources by people desperately trying to survive contributes heavily to many of the region's most severe environmental problems. (Friedman 1989, p.8)

The **social** consequences of poverty must not be overlooked -- they also feature in the concept of sustainable development. According to Heyzer (1990, p.92):

> One of the most important development objectives in Asia for the past two decades has been to reduce and eventually to overcome poverty. This involves, on the one hand, trying to relieve the suffering caused by poverty and, on the other, reducing the total number of poor.

She continues:

> Many development actions try to do something more; namely, to influence the process of development in such a way that the poorest are enabled to take charge of their own lives and mount their own initiatives in the improvement of living standards. In other words, these efforts are designed both for:
>
> - the poorest to have more (particularly in terms of food, health care, credit, new opportunities); and
>
> - for the poor to **be** more, in terms of self-confidence and the ability to overcome processes that may overwhelm them and to manage their own future.

Quite simply, sustainable development in this context refers to satisfying basic human needs and aspirations for a better life and 'self-determination'.

3. TOURISM AND SUSTAINABLE DEVELOPMENT

Although recognizing its substantial economic value, tourism, along with other major industries, must assume some responsibility for incurring environmental and sociocultural costs. Table 1 shows the potential **environmental** impacts (positive and negative) of tourism, and Table 2 some of the potential **economic** and **sociocultural** impacts (positive and negative). It should, however, be noted that not all impacts are observed everywhere, or to the same extent, and the costs and benefits of tourism are not evenly distributed.

TABLE 1: POTENTIAL IMPACTS OF TOURISM ON THE ENVIRONMENT

The natural environment

Changes in Floral and Faunal Species Composition

- Disruption of breeding habits
- Killing of animals through hunting
- Killing of animals in order to supply goods for the souvenirs trade
- Inward or outward migration of animals
- Destruction of vegetation through the gathering of wood or plants
- Change in extent and/or nature of vegetation cover through clearance or planting to accommodate tourist facilities
- Creation of a wildlife reserve/sanctuary

Pollution

- Water pollution through discharges of sewage, spillages of oil/petrol
- Air pollution from vehicle emissions
- Noise pollution from tourist transportation and activities

Erosion

- Compaction of soils causing increased surface run-off and erosion
- Change in risk of occurrence of land slips/slides
- Change in risk of avalanche occurrence
- Damage to geological features (e.g. tors, caves)
- Damage to river banks

Natural Resources

- Depletion of ground and surface water supplies
- Depletion of fossil fuels to generate energy for tourist activity
- Change in risk of occurrence of fire

Visual Impact

- Facilities (e.g. buildings, chairlift, car park)
- Litter

(CONTINUED ON NEXT PAGE)

TABLE 1: POTENTIAL IMPACTS OF TOURISM ON THE ENVIRONMENT (CONTINUED)

The built environment

Urban Expansion
- Land taken out of primary production
- Change of hydrological patterns

Visual Impact
- Growth of the built up area
- New architectural styles
- People and belongings

Infrastructure
- Overload of infrastructure (roads, railways, car parking, electricity grid, communications systems, waste disposal, and water supply)
- Provision of new infrastructure
- Environmental management to adapt areas for tourist use (e.g. sea walls, land reclamation)

Urban Form
- Changes in residential, retail or industrial land uses (e.g. move from houses to hotels/boarding houses)
- Changes to the urban fabric (e.g. roads, pavements)
- Emergence of contrasts between urban areas developed for the tourist population and those for the host population

Restoration
- Re-use of disused buildings
- Restoration and preservation of historic buildings and sites
- Restoration of derelict buildings as second homes

Competition

Possible decline of tourist attractions or regions because of the opening of other attractions or a change in tourist habits and preferences

Source: Green et al (1990, p.340)

Benefits may flow to cities and foreign markets while environmental and social costs are borne by local communities (Lea 1987). This can lead to resource exploitation, such as that observed in international tourism. Luxury tourism has been cited as a case in point:

> ... luxury tourism tends to require more imports, to be more capital-intensive, to be more dependent on outside control of capital, to encourage more of a sense of conspicuous consumption, and to result in a greater sense of relative deprivation than more modest facilities. (Richter 1989, p. 183).
>
> The luxury hotel in the developing nation requires excessive monetary support, disproportionate water, energy, food, land and construction materials -- all items in scarce supply. In some island destinations, reefs are dynamited and fishing destroyed so that beaches can be widened and swimming improved. (Richter 1989, p. 185).

More generally, Millman (1989, p. 275) points out that "Many researchers now contend that international tourism has created its own kind of north-south divide".

It would appear that developing tourism with a view to maximizing the benefits and minimizing the costs to a particular destination may be judged inadequate in terms of 'sustainability'. Greater emphasis should be given to tourism as a **vehicle for sustainable development**. In other words, the tourism industry must determine its role and long-term needs in relation to those of society and the environment. These should include:

- appropriate planned development;
- conservation and preservation of the environment as a primary resource;
- sensitivity to the needs of the host population; and
- provision of a quality experience for the tourist.

Although the **tourism industry** may become a proponent of sustainable development, it is important to recognize that the stability, role and policies of **government** can and do exercise tremendous influence over the "scale, cost, pace, control, and quality of tourism" (Richter 1989, p. 195). For example, the government could help "local businesses thrive through enterprises such as regional or cooperative airlines and reservation chains [which] can reduce dependence on foreign timetables and profit margins" (Richter 1989, pp. 195-196).

Richter (1989, p.195) recommends gradual tourism development and growth:

> Government planners should incorporate growth into their infrastructure development, but it is increasingly clear that tourism should be integrated into as diverse an economy as possible. The fickleness of the industry and its vulnerability to terrorism, political instability, and economic recession means that it should never be permitted to create a monoculture, particularly in island destinations that often assume that they can have no other option.

Indeed, Yacoumis (1989, p.22) cites how the South-Pacific Islands can be at the 'whim' of international airlines:

> ... large metropolitan air carriers are themselves subject to domestic political or business pressures in their respective countries and seem by and large to have no binding ties and loyalties to the island, other than pure commercial interests. So they can influence the entire tourism sector of the region, and their fickleness can wreak havoc on tourist industries on the islands.

TABLE 2: TOURISM BALANCE SHEET

BENEFITS	COSTS
Economic	**Economic**
Foreign exchange	Inflation
Build on the existing infrastructure	Foreign Exchange Leakage
Developed with local products and resources	Seasonality of tourism
	Unemployment
Spread development	Susceptible to political changes, rumors, spread of disease, economic fluctuation
Complement product of other economic activities	Unbalanced economic development
Employment: full time, part time, seasonal, unskilled	
	Demonstration effects Visual pollution Destruction of resources
Sociocultural	**Sociocultural**
Broadening of education	Misunderstanding
International peace and understanding Breakdown of language barriers, social or class barriers, religious barriers, racial barriers	Stereotyping
	Xenophobia
	Social pollution
Appreciation of one's own and other socio-cultural elements	
	Commercialization of the culture Commercialization of religion Commercialization of the arts
	Demonstration effects Prostitution Conflicts Crime

Source: Jafari (1983) as reported in Richter (1989, p.194)

Furthermore, as Richter (1989, p. 190) points out:

> From the case studies in Asia and the surveys from public sector tourism development, it is clear that control in a fundamental way is often denied those most affected and most vulnerable.

She further notes that:

> The problem of control is particularly acute in developing nations where so many possess so little, including political clout. Tourism is very seldom a public issue until it runs amuck. As such, political elites are seldom constrained in their tourism initiatives by ordinary citizens.

Some governments in the developing countries of Southeast Asia have tried to foster community participation in various development projects, which has met with mixed success. We now consider an example of this -- conservation management.

4. CONSERVATION MANAGEMENT: A CASE OF SUSTAINABLE DEVELOPMENT AND TOURISM WORKING TOGETHER

One approach which offers potential within the development context is conservation management. Although generally viewed in a positive light, conflict has arisen in trying to apply the **conventional** concept of **protected areas** of industrialized countries to developing countries. The conventional protected-area concept is described by Carew-Reid (1990, p. 34) as follows:

> Protected areas were not conceived to accommodate traditional values. The concept grew from concern over the effects of 'development' on natural systems. The aim was to protect Nature from Man, by preventing him from inhabiting an area and restricting his activities and access.

Examples of protected areas are national parks, marine national parks, provincial parks, historic sites, nature reserves, and national walking tracks. These have two main functions -- that of recreation and conservation -- and are attractive to urban dwellers and foreign tourists. However, in developing countries, indigenes may express resentment because:

- in establishing protected areas, there is little concession to other resource uses from those stated above;
- traditional rights and practices are not taken into account;
- there is a lack of community ownership by the indigenous population or tenure agreement for the next or future generations to work and manage the resources; and
- there is a shortage of land on which to continue traditional subsistence activities.

This is stressed by Carew-Reid (1990, p.33), who notes that:

> Traditional rights and practices underpin Pacific Island cultures and inevitably will override conservation measures which do not take them fully into account.

Currently, conservation management strategies and plans are recommended for the long-term management of a protected area.

Incorporated within these are biophysical information and social research (which examines the effects of the reserve on the local economy and society). Indeed, questions, such as the following, are designed to generate this information (Thorsell 1990, p. 15):

> "1. Resident and neighbouring populations:
>
> - How do local people perceive and use the reserve?
> - What benefits do they receive and what are the direct costs to them?
> - How best can their cooperation be fostered?
> - What traditional knowledge of the use of the reserve's resources has been documented?
>
> 2. Recreation and tourism:
>
> - What is the market area of the reserve?
> - How many visitors use the reserve? Where? When?
> - What other attractions and opportunities are found in the region?
> - Are facilities and services adequate?"

Increasing recognition that it is necessary to minimize the negative sociocultural impacts of tourism in order to ensure sustainable development is noted by Thorsell (1990, p.16):

> As most problems facing park managers today are at the park/people interface, research on the human aspects of protected areas management should be given much greater support than has been usual hitherto.

He continues:

> In protected areas that have resident human populations, special care will have to be taken to avoid deleterious effects on the cultural integrity of people whose way of life the area is designed to protect.

Tourism has been a major benefactor of protected areas, and although the income generated from tourist activities has contributed to conservation and preservation measures, perhaps the tourism industry needs to adopt a more **dynamic** approach in working with conservationists. For example, new forms of tourism which are more 'sustainable' in nature could be promoted. One recent product development is 'ecotourism'. By definition:

> (Ecotourism) is a subset of nature tourism taken a step further, with nature and tourism considered equal partners. It is not the harnessing of tourists for an environmental cause .... Ecotourism is more exclusively

> purposeful and focused on the environment or maintenance of natural systems through tourism. (Farrell and Runyan 1991, p.34)

Farrell and Runyan (1991, p.34) explain that:

> Ecotourism ... focuses on the environment in a ... manner in which conservationists and tourist interests see the mutual advantages of working together, to preserve environmental quality while mutually protecting tourism.

Examples of ecotourism would be cooperative strategies to save wetlands and rainforests.

5. CONCLUSION

Tourism was once viewed as the panacea for solving the economic problems of many countries, especially developing ones. Though admittedly of highly significant economic value, it has incurred substantial environmental and sociocultural costs. These have been well documented, but the tourism industry, along with other major industries is entering a new era. The 1990s are seen as the decade wherein most sustainable development issues must be addressed if the needs of present and future generations are to be realized. As Khosla (1989, p. 116) points out:

> Experience clearly suggests that for development to be sustainable, it must be based on processes that are efficient, equitable, environmentally sound and endogenous.

He goes on to emphasize that:

> ... it is becoming clear that these bases are essential to the attainment of sustainable development .... They follow directly, and logically, from the imperatives of human, social and planetary survival. In the longer term, any form of development which continues to violate them will be brought to an end by exceeding the capacity of nature to sustain it.

As a point of departure, the industry must ask itself the following questions:

- Does it understand the concept of and issues underlying sustainable development?
- Does it wish to embrace "sustainability" as an ethical choice, rather than an expression of market or political expediency?

- How can it implement this concept within tourism in such areas as planning and development, marketing and host/guest relationships?

Furthermore, the tourism industry can exert a positive influence upon governments to embrace sustainable development. The opportunities for tourism to influence governments are perhaps greater than for any other industry because it has the:

> most direct and indirect effects on the largest number of government ministries and departments .... It bears on the following: ... land use and urban development; infrastructure - airports, roads, railways, water and sewage, electricity generation and distribution, energy - oil, gas and coal; agriculture and fisheries; employment; health; education; economic and fiscal policy - including foreign investment; and foreign affairs - immigration and work permit policies. (Gajraj 1989, p.202).

Practicing sustainable development ensures that the industry protects not only its own interests, but also those of the environment and society over the longer term. If it fails to become involved, tourism is likely to become an even greater target for 'green' campaigners and will lose credibility. "Theory [of course] will only guide the future. It is action that will determine it" (Lindner 1989, p.3).

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TELECOMMUNICATIONS FOR SUSTAINABLE GROWTH

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1. INTRODUCTION

1.1 Key Elements for Future Development

In a globalized economy, the "4 T's" and the "2 E's" must be taken into account. These are:

The 4 T's

- Trade
- Transportation
- Tourism
- Telecommunication

Plus the 2 E's

- Energy
- Environment

Thus, from the early 2 T's of the telecommunication/trade-off through the 3T's of telecommunication, transportation and tourism one now moves on, at least in Indonesia, to 4 T's and 2 E's.

1.2 Role of Telecoms for Indonesia

For Indonesia, telecommunicatons is considered a vital infrastructure for national development. Specifically, it is an:

- instrument for clarification;
- instrument for productivity and improved efficiency;
- vital element for effective government;
- instrument for improved quality and equitable distribution of education; and
- instrument and catalyst for tourism development

More generally, telecommunication in Indonesia is an agent of national development

1.3 Tourism for Indonesia

In Indonesia, along with telecommunication, tourism is also viewed a means for strengthening the national identity of Indonesian people. Tourism is expected to:

- provide employment opportunities;
- generate foreign exchange;

- promote better international understanding; and
- be a mechanism for equitable distribution of development.

Overall, the expectation is that tourism will promote cultural activities in the society.

1.4 Tourism and Telecommunications

From the above, it follows that telecommunications and tourism are both vital components of national development. Together, they can:

- enhance the quality of life of all people; and
- enhance understanding among the people of the world.

In general, there exists a strong correlation between tourism and telecommunications which is expressed as follows:

- tourism stimulates telecommunications development; and
- telecoms is a vital infrastructure for tourism.

In sum, telecommunicatons and tourism have become interdependent.

2. SUSTAINABLE TOURISM GROWTH IN INDONESIA

2.1 Results of Repelita IV (1988)

- number: 1,301,049
- earning: $1,207 million
- stay: 11 days
- employment: 1.3 million

2.2 Target of Repelita V

- number: 2.5 - 3.5 million
- earning: $2.25 - 3.15 million
- stay: 12 - 14 days
- employment: 2.5 million

Please consult Table 1 for trends on tourist arrivals and earnings.

2.3 Basic Policy for Sustainable Growth

In Indonesia, seven basic policies have been developed to promote sustainable tourism growth. In brief, these policies are:

- Intensify Promotion/Marketing
- Expand Accessibility
- Improve Service and Product Quality

- Develop Tourism Resort
- Promote Marine Tourism
- Human Resource Development
- Improve Tourism Awareness (7 charms: Security, Orderly, Cleanliness, Beauty, Comfort, Friendliness/Hospitality, Happy Memories)

Taken together, these policies are intended to promote sustainable tourism.

3. TELECOMMUNICATIONS FOR SUSTAINABLE TOURISM GROWTH

3.1 Telecoms

- Global Connectivity + Global Marketing
- Info Network + Accessibility
- Management Network + National Stability
- Infrastructure for development + national economy and investment
- Info System + High Quality Service
- Education Networking + Human Resource Development

3.2 Telecoms for Tourism

- Telecoms global connectivity to and from all tourist destination centers
- Efficient and effective information network supporting all aspects of tourism
- Telecoms for speedy and reliable reservation system

The relationships between telecommunications are portrayed graphically in Figure 1.

4. STRATEGIC GOALS

The strategic goals, then, are to promote:

- tourism which enriches the environment;
- tourism which honours the religious and cultural value system of local people;
- tourism that enhances the quality of life of the people;
- integrated participation of all government departments and private sectors; and
- develop competitive advantage and ease of access and high quality service.

TABLE 1: TRENDS OF TOURIST ARRIVAL AND EARNING: 1969-1990

YEAR	ARRIVALS	EARNINGS (IN US$)
1969	86.100	10,8
1970	129.319	16,2
1971	178.781	22,6
1972	221.195	27,6
1973	270.303	40,9
1974	313.452	54,4
1975	366.293	62,3
1976	401.237	70,6
1977	433.393	81,3
1978	468.614	94,3
1979	501.430	188,0
1980	561.178	289,0
1981	600.151	309,1
1982	592.046	358,8
1983	638.855	439,5
1984	700.910	519,7
1985	749.351	525,3
1986	825.035	590,5
1987	1.060.347	837,7
1988	1.301.049	1.207,8
1989	1.625.965	1.284,5
1990	2.177.566	2.103,5

Puslitbang Parpostel

FIGURE 1: TELECOMMUNICATIONS FOR SUSTAINABLE TOURISM GROWTH

RESULTS OF REPELITA IV (1988)		TARGET OF REPELITA V
NUMBER	1.201.049	2.5 - 3.5 Million
EARNING	$1,207 MILLION	2.25 - 3.15 MILLION
STAY	11 DAYS	12 - 14 DAYS
EMPLOYMENT	1.3 MILLION	2.5 MILLION

5. CONCLUSION

From this presentation, it follows for Indonesia that:

- tourism needs high quality telecoms services;
- tourism needs participation of all people; and
- tourism is developed for the enhancement of the quality of life.

In sum, both telecommunications and tourism are expected to grow at a sustainable rate in Indonesia.

TELECOMMUNICATIONS AND TRAVEL: SOME FUTURE PROSPECTS

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1. INTRODUCTION

At about the same time, around 1970, communications satellites and long-range jets were introduced into the Pacific. Today, the impacts across the Pacific at the national and the regional level are everywhere evident and uneven, including in Hawaii.

This year, the one million residents of the Islands of Hawaii will host six million visitors. A similar 1:6 ratio for the 3.3 million resident New Zealanders would increase their 1991 estimated one million to nearly twenty million visitors. And, for 190 million Indonesians, the projected 1991 two million visitors would explode to 1,140 million, a number nearly three times greater than the 400 million international tourists estimated for the whole world this year -- and a number that approximates the entire population of the People's Republic of China. Said differently, at the monthly rate required for a 1:6 ratio of residents to visitors, all of the 400 million international tourists would have had to visit Indonesia prior to the May meeting in Bali. Not surprisingly, during Visit Indonesia Year, sustainable tourism growth was a major theme at the Bali meeting on Telecommunications and Travel.

Perhaps, as one Bali participant suggested, it is useful to remind ourselves that we are the descendants of hunters and gatherers, of nomads and seafarers. The cited propensity for a one unit increase in discretionary income to lead to a fourfold increase in likelihood of travel must be deeply rooted in our shared human experience. The potent combination of a newly acquired freedom to travel abroad and an increasing personal income is documented in Korea and demonstrated by citizens of other countries in the Pacific. For the region, the current 40 million tourists are expected to increase to 100 million or more by the year 2000 and, in turn, to require at least one million more skilled workers. This projected growth in demand was a matter of concern at the Bali meeting.

In this brief paper, the future prospects of telecommunications and the travel industry, with particular attention to tourism, will be considered. The main source of information will be the papers in this collection. The intent is to distill from the 25 papers additional information that may illuminate future prospects at the interface between telecommunications and travel.

2. SMALL PLACES

The carrying capacity of small places has been a concern in futures studies in the Pacific for at least two decades. While the number of voice circuits per satellite transponder and the

number of seats in a jet airliner can be known accurately, the capacity of a small culture to "host" visitors is largely unknown. Is a 1:6 ratio optimal? A satellite may drift out of orbit or a jetliner may crash land. But if a culture strays or crashes, no inspection team arrives to examine the site and record the nature of the catastrophe. Only, as PTC Board Chair and Hawaii resident Engelbardt notes, long after tourists stop coming is the "damage" to the environment likely to be assessed. Three cross-currents are of interest.

First, as Kennedy and others note, small "destinations" are becoming more selective on who is welcomed as a visitor. These preferences are reflected in the design of the resort, the teleservices offered, for example, video conferencing, and niche advertising. However, as was pointed out by Talbot and others, the very existence of small places may not be knowable to the potential visitor if the small destination is not "listed" in the world databases. And, the costs associated with that listing may be prohibitive.

Second, experienced travelers seek enriching experiences. They too have preferences. The very large CRS provide information for such travelers, but mainly about the large destinations that can afford the service. These experienced travelers require more information per decision; such detailed information may not be possible for the small places to provide on a timely basis. So, a match between the small destination that would be selective and the experienced traveler who would be discriminating is an uncertain affair. Perhaps services such as Hiline in Scotland that combine large CRS with experienced humans may bridge that gap, as Archdale suggests.

Third, governments emphasize that the national investment in tourism, and the telecom and travel infrastructures necessary to support it, cannot be justified on economic grounds alone. Several national spokesman at Bali had lists of requirements. Indonesia, for instance, expects tourism not only to earn foreign currency but also to develop outlying regions, create jobs, and conserve local traditions.

Thus, telecom and information services are expected to match the preferences of small places with those of experienced travelers in a way that is in harmony with the national goals of the varied countries of the region. This working conclusion from the Bali conference sets a daunting task.

3. TOWARD TELERESORTS

Both telecommunications and the travel industry experience peak and slow times: for telecommunications, peak daytime hours and holidays and slow nights; for the travel industry, high season weeks and off season months. The capacities of both industries, to restate the obvious, are of the flow type. Unused satellite

voice circuits, empty airline seats or vacant resort rooms generate no revenue.

Three loosely related problems were discussed in the Bali papers, during a breakfast working group and through follow-on informal dialogue. These include: absence of an accurate mapping of seasonal use of resort facilities for the region; lack of skilled human resources; lack of year round employment opportunities for skilled resort personnel. The task set here is to configure these problems in such a way that resort resources can be put to productive use in the off-season.

The focus here will be on those ISDN ready resorts in remote areas that have Vsat transceivers, or equivalent transmission capabilities, connected to a LAN server with external storage and network operating systems, system application packages and a variety of devices including high end workstations and printers. A video conferencing capability is assumed. Given this configuration, a resort will be considered to be a: teleresort.

A teleresort will function as an ordinary resort during the high season. During the low season, surplus capacity is assumed available for use in human resource development and deployment.

For human resource development, the teleresort could function as a study center for telelearning. Open universities in the region, STOU in Thailand, for example, have found that students need study centers in remote communities. While neighborhood schools can be used for this purpose, typically they do not have the "teleresort" class of technology that effective telelearning or distance education increasingly requires. Further, students engaged in telelearning in such centers require the services of local tutors; some resort workers could serve as tutors during the off-season. Thus, a teleresort could in off-season serve the human resources development needs of the resort itself, including the training of its own "high tech" personnel, and also serve some of the educational needs of the immediate community.

For human resource deployment, the teleresort could function as a center for teleworking. Assuming a particular resort participates in the regional reservation systems, it would also be possible for resort workers on one side of the equator to work "remotely", to telework, at resorts on the other side of the equator on back office and other appropriate tasks. Obviously, careful coordination would be required, but such coordination would not be more complex than that customarily handled through the reservation systems.

Further, in the manner of the successful Scandinavian Community Teleservice Centers, the teleresort in the off-season could serve additional functions. For instance, a teleresort could also function as an incubator for small start-up travel support services and software development enterprises, offer special study/work packages for off-season visitors, and support the wide

range of tasks related to the conservation and animation of the local culture and the preparation of materials about the resort itself for online databases.

In this way, the cross-subsidization long practiced in telephony can be adapted to resorts in remote areas, that is, to teleresorts. For this approach to work, a partnership would need to develop among the teleresort, the community, the local and national governments and worker representatives.

To examine this cluster of possibilities more closely, a pilot study will be needed. Such a study would survey a few representative locations to estimate the appropriateness of the envisioned human resources development and the deployment, that is, telelearning and teleworking. If, as expected, attractive opportunities can be identified, an in-depth study could be undertaken, perhaps under joint PTC and PATA guidance.

4. FUTURE PROSPECTS

The prospects for growth at the interface between telecommunication and recreational travel appear strong, with an expected increase in travelers from about 40 million in the current year to more than one hundred million in the year 2000 in the Pacific Region. For the most part, planners from Indonesia and elsewhere appear confident that sustainable growth can be achieved.

The challenge for sustainability appears strongest in those communities, usually described as remote, where the microculture appears fragile and easily disrupted by too many visitors in too short a time. A challenge of opportunity for telelearning and teleworking appears once an ordinary resort is viewed as a teleresort. To meet these twin challenges, and others sure to follow, a continuing dialogue between PTC and PATA could be beneficial.

For the most part, the horizon for the Bali discussion was the next ten years, the Year 2000, even though the cycle for the development and deployment of human resources will span decades and the lifecycles of local cultures could reach across many centuries. Noticeably, no one mentioned the Year 2100 even though some of the developments under discussion seem likely to have their greatest impact on the Pacific Region after that date.

Aloha.

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Pacific Telecommunications Council

The Pacific Telecommunications Council, founded in 1980, occupies a unique place in the dynamic world of Pacific hemisphere (and global) communications.

The Council serves as a regional telecommunications organization which brings together in a single forum both the providers and users of communications services, as well as policy makers, planners, scientists and academicians.

The Council is the only non-profit and non-governmental organization especially designed to embrace members from all countries that play a role in the developmental and beneficial use of telecommunications in the Pacific hemisphere. This area includes North, Central, and South America; Northeast, South and Southeast Asia; and Oceania: Australia, New Zealand, Melanesia, Micronesia and Polynesia.

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